Medical Library

BRITISH MEDICAL JOURNAL

JOURNAL OF THE BRITISH MEDICAL ASSOCIATION

SATURDAY OCTOBER 7 1944

TABLE OF CONTENTS

Surgery in Tunisia J. M. WEDDELL, F.R.C.S. 459

Enuresis in the Army P. L. BACKUS, M.D., and G. S. MANSELL, M.R.C.S. 462

Chest Complications after Gastric Surgery T. W. MIMPRISS, F.R.C.S., and F. G. ETHERIDGE, B.M. 466

Two Varieties of Leukaemia in One Family R. W. MEIKLE, M.B. 468

Superficial Gangrene in Adolescent Diabetes H. WHITTAKER, M.R.C.S. 469

MEDICAL MEMORANDA

A Case of Petrositis. D. L. BRIDGEWATER, M.B. 470

Dried Rabbit Plasma for the Staphylococcus Coagulase Test. J. C. COLBECK, M.B., and H. PROOM, B.SC. 471

Abortive Lobar Pneumonia after a Course of Sulphapyridine. BASIL LEE, M.R.C.S. 471

GENERAL ARTICLES AND NEWS

Simple Splint for Fracture of Clavicle. B. WHITCHURCH HOWELL, F.R.C.S. ... 473

MEDICAL NOTES IN PARLIAMENT 484

MEDICAL NEWS 484

THE SERVICES 486

UNIVERSITIES AND COLLEGES 486

REVIEWS

The Medical Annual 472

Alcohol Addiction 472

Medical Problems of Flying 472

Veterinary Diagnosis 473

Notes on Books 473

OBITUARY

R. Higham Cooper, C.B.E., L.S.A. 483

Sir Humphry Rolleston 483

Frank Douglas Marsh, F.R.C.S. 483

G. Foster Barham, M.D. 483

Epidemiology Section 485

LEADING ARTICLES

Social Insurance 474

Treatment of Cerebrospinal Fever 475

ANNOTATIONS

Vitamin B_1 and the Heart 476

The Making of Books 477

A Window on Scottish Slums 477

LETTERS AND ANSWERS

Whooping-cough Prophylaxis?—Snoring in the Shelter—Otitis Media and Otitis Externa—Vulval Warts—Pyretotherapy for Gonorrhoea—Joss-sticks and Mosquitoes — Dipsomania — Heredity and Involutional Depression — Milroy's Disease — Postponement of Menstrual Period — Bactericidal Action of Lactic Acid—*X*-ray's Diagnosis of Appendicitis—Constitutional Obesity—Streptococcal Throat Carrier—Midwifery and Housing—Wooden Bullets—Wasp and Bee Stings—Sodium Morrhuate for Injection 486

SUPPLEMENT

Report of Scottish Committee on the White Paper *73*

CORRESPONDENCE *76*

ASSOCIATION NOTICES *76*

BRANCH AND DIVISION MEETINGS *78*

POSTGRADUATE NEWS *78*

CORRESPONDENCE

Fracture-dislocation of Talus. R. WATSON-JONES, F.R.C.S., and H. OSMOND CLARKE, F.R.C.S. 478

Artificial Respiration. R. PETERS, M.R.C.S. 478

Metric System. A. H. DOUTHWAITE, M.D.; S. A. W. RUSHBROOKE, M.R.C.S. 478

Liver Function. H. UCKO, M.D. 479

Meeting of Whole-time Specialists. C. ALLAN BIRCH, M.D., and others 479

Intramuscular Quinine. J. W. RIDDOCH, M.B. 479

Functional Hypoglycaemia. W. G. OAKLEY, M.D. 479

London Medicine. T. R. HILL, M.D. ..479

Postgraduate Medicine. Sir ADOLPHE ABRAHAMS, M.D. 480

Psychological Medicine and the Family Doctor. A. J. BROCK, M.D. 481

Bureaucracy and Wet Babies. HARRY ROBERTS, L.M.S.S.A. 481

Service Medicine. J. R. POOLER, M.B. ..481

Medical Services—Home and Colonial. T. LINDSAY, M.D. 482

Demobilization and the E.M.S. R. J. RUTHERFORD, F.R.C.S.Ed. 482

Tapeworm in Trout. M. D. HICKEY, M.D. 482

Why Vesalius chose Basle. G. W. RONALDSON, M.D. 482

Early Days at Johns Hopkins 482

BRITISH MEDICAL ASSOCIATION, TAVISTOCK SQUARE, LONDON, W.C.1

No. 4370, WEEKLY, PRICE 1/6

Copyright

REGISTERED AS A NEWSPAPER

VIMALTOL

(VI-MALT-OL)

A Delicious Concentrated Vitamin Food

TO the physician requiring a product which incorporates important vitamins in a form entirely pleasant and acceptable to every patient, "Vimaltol" presents special advantages.

"Vimaltol" is a concentrated and economical vitamin food with a delicious orange flavour. The vitamins are supplied from specially prepared malt extract and yeast, which is one of the richest natural sources of vitamin B, together with Halibut Liver Oil fortified with additional vitamins.

"Vimaltol" is thus an important aid in the treatment of the many abnormal conditions resulting from the deficiency of one or more of the essential vitamins in the average everyday dietary. The routine use of "Vimaltol" helps normal development of the growing organism and the maintenance of correct metabolism, while raising the general resistance against infection.

It is of signal value at certain physiological periods, such as infancy, adolescence, and pregnancy, to promote resistance to deficiency diseases and to assist in restoring normal metabolism in the many "borderline" cases arising from insufficient intake or defective assimilation of the essential food factors.

"Vimaltol" has thus a very wide application in general practice for patients of all ages. It can be prescribed with advantage at all seasons.

A liberal supply for clinical trial sent free on request.

A. WANDER LTD., King's Langley, Herts.

M 305

Feeding in Pregnancy

A recent paper (*Lancet*, Feb. 12th, 1944, p. 208) testifies to the special value of the inclusion of Marmite in the diet during pregnancy. Evidence is cited which shows "that supplementary feeding with Marmite, or a similar yeast extract, during pregnancy results in a statistically significant reduction in the stillbirth-rate and neonatal mortality."

Marmite is prescribed extensively for its medicinal and dietetic properties.

MARMITE

Yeast Extract

THE MARMITE FOOD EXTRACT CO. LTD.

35 Seething Lane London, E.C.3

444

BELLERGAL

A PHARMACOLOGICALLY BALANCED ASSOCIATION OF ERGOTAMINE TARTRATE, SEDATIVE OF THE SYMPATHETIC, THE TOTAL LAEVOROTATORY ALKALOIDS OF BELLADONNA, SEDATIVE OF THE PARASYMPATHETIC, AND PHENOBARBITONE, SEDATIVE OF THE CENTRAL NERVOUS SYSTEM.

THE MOST RECENT ADVANCE IN THE TREATMENT OF

DISORDERS OF THE AUTONOMIC NERVOUS SYSTEM

• • •

FULL PARTICULARS FROM

C. WALKER, **SANDOZ PRODUCTS**

134, WIGMORE STREET, LONDON, W.1

BRITISH MEDICAL JOURNAL

LONDON SATURDAY OCTOBER 7 1944

SURGERY IN TUNISIA: NOVEMBER, 1942, TO MAY, 1943

BY

J. M. WEDDELL, C.B.E., F.R.C.S.

Colonel, late R.A.M.C.; Late Consulting Surgeon, Allied Force Headquarters, British North African Force

It is proposed to give a short outline of the campaign in North Africa, to describe the general lay-out of the medical units with the force, and to indicate some of the points of interest and lessons learned during that period.

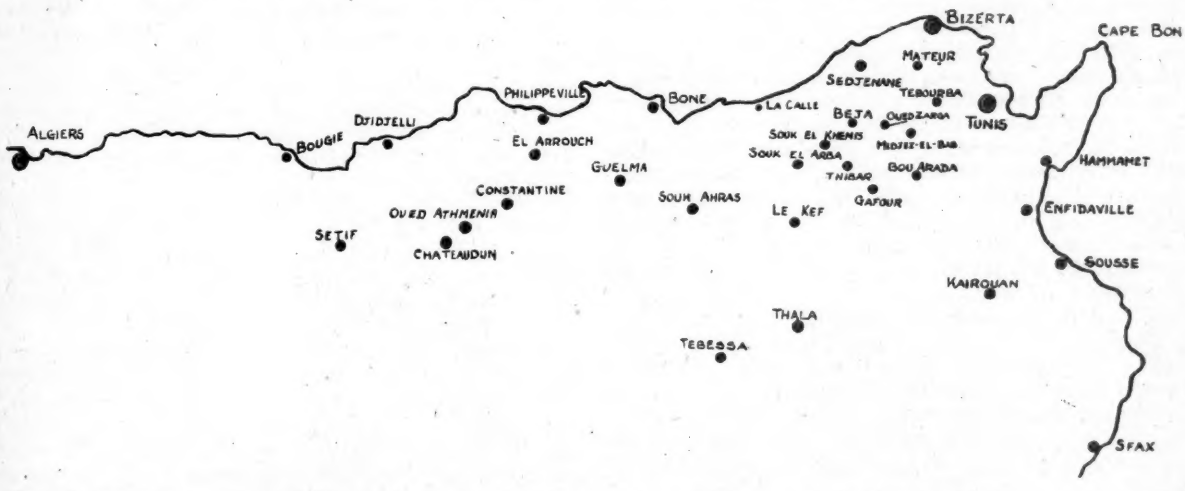
In Nov., 1942, American and British forces landed at various points on the coast of North Africa. The British force—called the First Army, but in reality at this time only two infantry brigades, a tank regiment, and auxiliary services—made landings on the coast of Algeria. The subsequent campaign may be divided into various phases: (1) the thrust forward of the First Army into the hills overlooking the plain of Tunis; (2) the build-up of the force; and (3) the final attacks on Bizerta and Tunis. During the first phase there was heavy fighting to establish our positions in the hills around Beja, Medjez-el-Bab, and in the north round Sedjenane. The build-up occupied the winter months and early spring of 1943. During this period there was continuous hard fighting in the hills, which culminated in the capture of Longstop Hill and other key positions and made possible the final break-through to the plains of Bizerta and Tunis. Towards the end of this period the Americans had moved up from the south and taken over the northern sector of the line. The Eighth Army, in pursuit of Rommel, had broken through the enemy lines at Mareth and the Wadi Akarit and occupied Gabes and Sfax. The British and French forces held the central sector. The final phase included the capture of Bizerta by the Americans, the capture of Tunis by the First Army, the French, and some divisions of the Eighth Army, and the advance northwards of the main Eighth Army to the base of Cape Bon. The battle terminated with the round-up and surrender of the whole of the enemy forces on the Cape Bon peninsula.

One difference between the Middle East and the North African campaigns was that the operations in the Middle East started from a large peacetime organization, whereas in North Africa everything had to be brought by a long sea route and much improvisation was necessary. A number of schools and barracks in Algeria were taken over for hospitals, and several of the general hospitals had to open up at once in tents. This involved a great deal of alteration and construction work for the Royal Engineers and Works Services. As time went on, a proportion of hutting was carried out for the tented hospitals.

The country was difficult. Much of it was mountainous, with narrow winding hill roads. Considerable stretches of plain intervened between the mountainous areas. The main roads were limited. There were two routes to the forward area—one inland through Setif, Constantine, and Souk Ahras to Beja and Medjez-el-Bab leading on to Tunis, the other along the coast through Bougie, Philippeville, and Bone. A certain number of cross-roads connected the two main routes.

The railway consisted of the main line through Setif and Constantine to Tunis. Branch lines ran from this to various places on the coast. The lines of communication were long and difficult; the distance from the main base at Algiers to the forward area was the best part of 500 miles by road.

In the winter months rain and mud made conditions extremely hard. The forward troops fighting in the hills, living in fox-holes and under any cover that could be found, had a gruelling time. The tented hospitals—until proper camp roads, concreted floors for operating theatres and tents, adequate sanitary annexes, and cooking arrangements could be prepared—worked under most difficult conditions.



By the middle of Jan., 1943, the medical lay-out was as follows. The main base was at Algiers, with secondary bases on the coast at Bougie, Philippeville, and Bone. At each base there was an Assistant Director of Medical Services at area headquarters. Other areas and medical units were on the inland route on the lines of communication. The Director of Medical Services for the force and his staff, including the consultants and advisers, were located at Algiers. Four general

hospitals were established a few miles outside the town in buildings (an orphanage, a school, and barracks) and partly in tents. One unit was in an excellent sanatorium at Rivet, in the hills about 20 miles inland, with good operating theatres, *x*-ray department, and wards.

At Bougie one general hospital was in tents about four miles inland from the port. Near Philippeville one 1,200-bedded general hospital was in tents at Ste Jeanne d'Arc, a small seaside resort about four miles east of the town. A 600-bedded hospital was in process of opening alongside. These were excellent sites on sandy ground sloping down to within a few hundred yards of the sea. Another 1,200-bedded hospital and a Canadian general hospital came later to El Arrouch, about 20 miles inland, both in tents. Near Bone one 600-bedded general hospital was in tents about 15 miles inland from the town. A 200-bedded general hospital was at La Calle, near the coast some miles east of Bone. Inland, the headquarters of the lines of communication were at Setif; the Deputy Director of Medical Services for the Lines of Communication was here, and a field hospital (50 beds) was in buildings in the town. Further east, on the Setif plateau, a 600-bedded hospital was at Oued Athmenia, partly in a good building and partly in tents. Later a 1,200-bedded general hospital opened at Châteaudun. A field hospital (50 beds) was at Constantine; at Guelma, a few miles off the main road, a 600-bedded hospital was open in tents. The most forward of the 600-bedded general hospitals was at Souk Ahras, near the Tunisian border: this was partly in buildings and partly in tents. For a time one 200-bedded general hospital was at Biskra. The personnel and equipment of this unit were moved to the site entirely by air.

In the forward area the C.C.S.s, F.S.U.s, F.T.U.s, advance depots of medical stores, and the field ambulances were with the First Army from Sedjenane in the north, through Medjez-el-Bab, Beja, and Thibar, down to Bou Arada and Gafour in the south. The Medical Headquarters for the Army, the D.D.M.S., and his staff were at this time in the neighbourhood of Souk Ahras. One parachute field ambulance dropped very early in the campaign near Beja and carried out 136 operations there in the first few weeks.

Evacuation from the forward area was by road, rail, and air. By road, evacuation was by motor ambulance convoy through the general hospitals to (1) Philippeville, Guelma, and Bone, and (2) Souk Ahras and Oued Athmenia, to Algiers. Rail evacuation, to begin with, was slow and difficult. Ambulance trains were improvised from ordinary French rolling-stock, but by degrees corridor ambulance trains became available, and by May, 1943, nine of these were working. In the early stages of the campaign evacuation by air from the forward area was not practicable, but was carried out, in considerable numbers, from airfields on the lines of communication. A large airfield was sited near Oued Athmenia, and the general hospital there evacuated many cases in quite early days.

When forward airfields were established round Souk El Arba and Souk El Khemis, and air superiority had been obtained, more forward air evacuation became possible. Certain difficulties were encountered: low cloud over the hills and poor visibility often made flying impossible. The arrival of planes on a forward airfield is apt to be capricious, and it is not always certain to what destination the planes will return. To take patients 20 miles or so over indifferent roads, make them wait several hours on the airfield, and then have to take them back is not good treatment. Also, to have a holding medical unit at a forward airfield is not always possible. Therefore air evacuation, though often extremely valuable, has its limitations.

By May, 1943, the total American and British cases moved by air in the British North African Force were 16,500. The average distance was 300 miles. The average time of each journey was two hours. The British cases numbered 4,400 (surgical, 2,400; medical, 2,000). All types of surgical cases were taken except the following: (i) perforating chest wounds in the early stages; (ii) pneumothorax; (iii) severe shock associated with heavy loss of blood; (iv) intestinal wounds or disease. Evacuation to the United Kingdom was based on a 90-day policy; that is to say, those who would not be fit for duty in 90 days were evacuated from the force. Hospital ships and carriers sailed only to and from Algiers, so that all cases for evacuation to England had to be collected at that port.

Field Surgical Units

The F.S.U.s were the War Office scale of personnel, equipment, and transport. They differed from the Middle East surgical units in that, in North Africa, the F.S.U.s had rather more equipment, including 20 hospital beds and a lighting set. The personnel and transport were on a slightly more generous scale. This was the first occasion these units had been mobilized for a field force. The Middle East had improvised their own. At this time there were no field dressing stations (F.D.S.s), which were the units designed to combine with the F.S.U.s to form an advanced operating centre. The F.S.U.s were therefore attached to C.C.S.s or the main dressing stations of field ambulances as their parent units. I think that many of the difficulties met with in those early days are overcome by the F.S.U.s when they are combined with their correct parent unit, the F.D.S.

As previously stated, the earlier months of the campaign were occupied in clearing the hills overlooking the Tunisian plain. During this period the C.C.S.s and F.S.U.s were comparatively static. When the general advance took place and the fighting became mobile these units were able to follow up behind the fighting troops. Concerning this latter phase there are some points of interest:

On account of the short distances it was possible to group C.C.S.s and F.S.U.s at points fairly close to the fighting line.* For example, at one time at Oued Zarga three C.C.S.s were grouped, each with two F.S.U.s and a field transfusion unit attached. These made an excellent operating centre 10 to 15 miles behind this portion of the front. Each C.C.S. admitted 100 casualties and then closed until 100 casualties had been admitted by each of the other two. In this way surgical teams could work with a reasonable time for sleep, meals, cleaning up theatres, and after-treatment of patients.

Three 600-bedded hospitals and three 200-bedded general hospitals had been allotted to the D.D.M.S. of the First Army. These were made "movable" and were also grouped. In the battle of Tunis one group of these was located at Thibar, about 20 miles behind the C.C.S.s and F.S.U.s. They admitted third-priority cases from the front and staged cases operated on at the advanced operating centre. This was made possible by a system of sectional packing of the hospital equipment and by the excellent work of the Royal Engineers and Works Services in providing a piped water-supply, sanitary annexes, concrete floors for operation tents, etc., all carried out within a very few days.

It was possible to spare an officer in charge of the surgical division of one of the newly arrived 1,200-bedded general hospitals, not yet open, to go round the C.C.S.s and F.S.U.s, work with them, and advise on operative technique and treatment generally. This was most useful, and is well worth arranging when possible, especially if some of the forward surgeons have not had much experience in dealing with battle casualties. Personal instruction and example are far more useful than all the paper one can send round. The officer in charge of the maxillo-facial unit had also been round advising the forward surgeons on the initial treatment of these cases.

An experienced operating ophthalmic surgeon was with the First Army. He had a lorry, a small technical staff, and optical equipment (lenses and frames), and toured the forward units and formations. In this way not only was skilled operating available as far forward as possible, but the replacement of lenses and spectacles was carried out in the most expeditious manner and a large amount of man-wastage saved. This was a forerunner of the mobile ophthalmic unit later created by the Consulting Ophthalmic Surgeon.

Team-work and Equipment

These units thoroughly justified their formation. They did excellent work throughout. The policy of bringing the surgeon to the wounded, within limits, is sound. Team-work is the

* Grouping of C.C.S.s was first carried out in 1915 at Remy Siding, where Nos. 10 and 17 C.C.S.s were located and alternate periods of duty were taken. This grouping of two and often three C.C.S.s then became routine.

essential. The unit must work as a whole and each man have his definite duties. The orderlies have more to do after the operating is finished, and tend to tire sooner than the surgeon. All need reasonable time off, sleep, and regular meals.

The equipment on the whole was adequate. General demands for certain items were put to the War Office and have been supplied. Heating is necessary for the theatre and wards in cold weather. Two Valor stoves were authorized for each F.S.U. in Tunisia.

A surgeon should not be kept with a forward unit too long. He must see at the base the results of forward surgery and thus complete his surgical education. I am of the opinion that a year is quite long enough for a surgeon to be with one of these forward units. If possible, a newcomer should work his way from a general hospital at a forward base, where he can observe the later conditions of wounds and see the reasons for advising certain lines of treatment and the various troubles and difficulties which may arise during the evacuation of casualties.

Location of Advanced Operating Centres

These should be as far forward as possible. This undoubtedly does help the morale of the troops; *but* they must be in a position where the severe cases, especially wounds of the abdomen, can be retained in reasonable safety and comfort for at least ten days after operation. After-treatment and good nursing are just as important as surgery. Early evacuation of these severe cases is disastrous. When it is possible to attach nursing sisters this is a great advantage.

Except in special circumstances, it is unwise to put a single surgical team forward with a field ambulance. One surgeon can cope with only a limited number of cases. The theatre staff do not finish when the operating is over, and they get more tired than even the surgeon. Also the nursing, after-treatment, and retention of the severe cases become more difficult.

[NOTE.—With reference to the location of advanced operating centres, it is of interest to recall an extract from a memorandum by the Consulting Surgeon to the Army after the last war:

"The conception of British surgeons is that no surgical operations of magnitude can be satisfactorily performed with a hope of a successful result if the patient has to be moved immediately after the operation. Consequently the arrangement is that, with a few exceptions, *operation* will be performed at the *casualty clearing stations*. These may be situated from 10 to 15 miles behind the actual fighting line; but experience has shown that, with modern motor ambulance transport, the extra time taken to get the wounded man a few miles further back than the main dressing stations of the field ambulance is only a fraction of the time spent in getting him from the place where he was wounded to the field ambulance. This extra time is well worth while to get the man to an area which will be more or less free from enemy fire, where more elaborate and permanent arrangements can be made for resuscitation, operation, and, more important still, where serious cases can be *retained for some days* at least and efficiently nursed before being evacuated further to the lines of communication or base.

"The policy of having operating areas *nearer* to the fighting lines was tried in the British Army, and was definitely found to be *unsatisfactory* even in the comparatively stable fighting line in France and Flanders.

"These advanced operating centres were primarily designed to deal with abdominal cases. In quiet times on the fighting front they did good work and undoubtedly saved lives, owing to the proved fact that early death in cases of abdominal wounds is primarily due to haemorrhage. In periods of heavy fighting they failed. The reasons for this failure are that an operating unit situated close up to the fighting line could only rarely be efficiently housed. Accommodation for more than one or two operating teams was difficult and shelter for patients bad.

"The time taken to operate satisfactorily on one abdominal case is usually about one hour, and it is easily seen that if 40 or 50 abdominal cases arrived at such a centre a long period would elapse before the majority of cases would reach the operating table. The wounded would have a much better opportunity of receiving surgical attention if they were evacuated by motor ambulance transport another 10 miles further back, where they would take their turn with a mixed class of case. In addition, the difficulties of providing efficient nursing and after-care, on which British surgeons lay great stress, and the possibility of early evacuation on account of enemy fire and pressure of cases, were so much against the interests of the patient that this policy of operating arrangements close up to the fighting line is *not* now favoured."]

On the clinical side it is proposed merely to refer shortly to points which were of interest so far as this force was concerned. Every opportunity was taken to make use of the experience gained by the surgeons in the Middle East, and their reports and surgical memoranda had been carefully studied. Copies of several of these had been sent to surgeons before the landings, and from time to time fresh memoranda on surgery were issued.

First-aid Treatment

This was generally of a high standard. The Thomas splint, usually with the metal boot-clip, was universally and correctly used. Tourniquets were rarely seen and rarely necessary. There was a tendency at times to overdo the injections of morphine. If patients passed through several posts they were sometimes found to have received as much as a grain of morphine by the time they arrived at the operating centre. Morphine is only very slowly absorbed in badly shocked patients. Men would also sometimes arrive with many cups of tea inside them.

Resuscitation

This was well provided for, and the field transfusion units did excellent work. The question of blood versus plasma has been much discussed. The experience of our surgeons was that cases with severe injuries could be restored to a reasonable condition with plasma, but that they would not then stand an operation of probably an hour's duration without blood. Blood will revive patients more quickly and enable them to stand the added trauma of operation much better than plasma alone. I consider that blood was neither wasted nor used excessively. It may be noted that, with the advances made in resuscitation, more of the very severely wounded become fit for operation than was possible in the last war. Worse risks come to the surgeon, and the actual post-operative mortality is probably higher, but certainly more lives are saved.

In attempting to forecast the numbers of patients who will require resuscitation various factors should be borne in mind. If the unit is dealing with first-priority cases a large proportion, probably over 50%, will require resuscitation; if with second and third priorities, there will be many fewer. The longer the time lag in the receipt of the cases, the more will require resuscitation. Local conditions, cold wet weather, a long journey over rough roads, will also have their effect.

Anaesthesia in the F.S.U.s and C.C.S.s

Apart from the use of ether for laparotomies and multiple wounds, most patients were anaesthetized with pentothal. The advantages of this drug are the rapidity of induction and the freedom from post-anaesthetic vomiting—a point of the greatest importance in the busy post-operative wards. Pentothal with oxygen was very satisfactory for the thoracic cases. Many of the anaesthetics in the C.C.S.s were given in a most competent manner by officers of the Army Dental Corps. The Oxford vaporizer proved a very satisfactory machine.

Types of Wounds

These varied greatly according to circumstances. Often the wounds were multiple. Mortars were much used, and were responsible for many of these. Mines caused many severe wounds of the feet and legs. It is essential to examine the whole of the patient, and extensive cleaning with soap and water and wide shaving should always be carried out.

Wound Treatment

Treatment was conducted on standard and accepted lines. In the early stages of the fighting one saw cases from which too much skin had been excised, a few attempts at primary suture, too tight packing of wounds, and insufficient division of deep fascia. This last was found especially necessary in wounds of the buttock, calf, and popliteal space. Attention was drawn to these points in surgical memoranda.

Extremities and Joints.—For transport during evacuation some form of the "Tobruk" plaster was universally used for the lower limb. Some surgeons developed slight modifications of their own.

The type generally used at this time was the encasing of the limb in plaster, with slits for the traction strapping and fixation of the limb to the Thomas splint with plaster bandages. The plasters were always padded and split. Details, with dates and simple diagrams, were well marked on the plaster, and proved most useful. For the upper extremity the "U" plaster, from the nape of the neck and including the forearm, was mostly used, and proved satisfactory. The immobilization of extensive soft-tissue wounds had been advised, but was perhaps not carried out as often as it might have been. Traction for wounds of the knee-joint was occasionally found to have been omitted. The usual faults in plaster work appeared from time to time: carrying the plaster beyond the proximal crease of the palm, so that stiffness of the metacarpo-phalangeal joints and fingers results; lack of instruction to the patients to move the fingers and toes continually; faulty position of the ankle and foot. These faults always seem to be cropping up, and need constant attention. The results are very difficult to correct.

Abdomen.—The treatment evolved in the Middle East was amply confirmed: suture, when possible, rather than resection; exteriorization and colostomy for wounds of the colon and rectum; gastric suction and intravenous therapy as a routine; and retention of cases for a minimum of ten days.

Chest.—Conservative surgery (wound excision and closure of the open pneumothorax), with early aspiration, was the rule, and proved satisfactory. Great relief of dyspnoea was noted after the early aspiration of haemothorax fluid. Many breathless shocked patients were greatly relieved by being propped up, and these cases travel better in ambulances and trains when so positioned. The advantage of treating the shock by the completely recumbent position does not compensate for the serious respiratory embarrassment caused. In only a few cases was full thoracotomy indicated in the forward area.

Head.—At the beginning there was some difference of opinion between the F.S.U. surgeons and the neurosurgeons as to whether the general surgeons should deal with these cases. It was pointed out that in the forward units the general surgeon had no special equipment for this type of work: diathermy was not available; *x*-ray examination was not always possible; and at the time there was only improvised suction. It was therefore accepted that it was better to get patients back to the neurosurgical unit with 48 hours if this was possible, for operation there. The sulphonamides—sulphadiazine when available—were always used.

Maxillo-facial Wounds.—As little as possible was done in the F.S.U.s and C.C.S.s beyond cleaning up, the arrest of haemorrhage, and fixation of the jaw, when necessary, by the dental officer. These cases were then transferred to the maxillo-facial unit.

Burns.—All coagulation treatment was forbidden as first aid. The routine was sulphanilamide and vaselined-gauze dressing. It was confirmed that cases of severe burns travel badly during the first five or six days after injury.

Septic Sores.—During the hot weather there was much man-wastage from sores on the exposed areas of the knee, elbow, and forearm regions. Often quite trivial in origin, they became chronic and resistant to treatment if neglected, and frequently meant weeks in hospital. There seemed to be no panacea for them. Unit medical officers were asked to get men with even minor skin abrasions, thorn-pricks, etc., to report sick at once so that they could obtain early treatment.

Whitlows.—It was found necessary to issue an instruction that only the most minor conditions should be treated by unit medical officers. Much time and many bad results are saved by early admission to hospital. Too many midline and inadequate incisions under ethyl chloride were seen in the early stages of the campaign.

Chemotherapy.—It was impressed on all that the sulphonamides are not a substitute for early surgery. These drugs were used prophylactically and therapeutically. To begin with, oral doses at four-hourly intervals had been advised for all wounded. In practice this broke down on the long lines of communication, and the Middle East sulphanilamide label, with the two doses at 8 a.m. and 6 p.m., was adopted. Owing to the universal use of these drugs, both orally and locally, it was impossible to evaluate their effect. The general impression was that they were of value in retarding the onset of infection. Also, as compared with the last war, the appearance and general condition of the men in the base hospitals seemed better. Although many wounds were infected the patients did not look so toxic and ill. Sulphanilamide, sulphathiazole, and sulphapyridine were the forms mainly in use for surgical cases. Some sulphadiazine was obtained latterly. Penicillin was not available in this campaign. The Penicillin Unit arrived in North Africa in May, 1943, and began investigations in one of the Algiers hospitals.

Anaerobic Infections.—Tetanus: Up to May, 1943, one case of generalized tetanus occurred in a German prisoner-of-war and one case of local tetanus in a British soldier. Both recovered. *Gas gangrene:* It is regretted that actual figures are not available. Up to May, 1943, there had been under 100 cases. Treatment was by early surgery, large doses of serum, and the sulphonamides.

Some Statistics

(*a*) The number of battle casualties operated on in 12 F.S.U.s and 6 C.C.S.s between Nov., 1942, and May 15, 1943, was:—total operations, 8,881: deaths, 331; mortality, 3.72%. It is interesting to compare these with some figures from the last war. On the Somme in July, 1916, 13 C.C.S.s of the Fourth Army dealt with 14,400 casualties on the first day, 13,306 on the second day, and 8,793 on the third day. The surgical staff of the C.C.S.s had, of course, been reinforced by a considerable number of surgical teams.

(*b*) Figures from four general hospitals in Algiers for the period Nov., 1942, to Sept., 1943 (wounds of the abdomen, chest, and head), were:

	Total	To Duty	To Conv. Depot	Trans. to Other Hosp.	To U.K.	Died	Remaining	Mortality
Wounds of abdomen	287	77	54	14	129	8	5	2·7%
Wounds of chest	599	147	127	72	221	5	27	0·8%
Wounds of head	420	129	52	43	170	9	17	2·1%

Acknowledgments are gratefully made to the D.M.S. of the British North African Force, Allied Force Headquarters, Major-Gen. Sir E. M. Cowell, and to the D.D.M.S., First Army, Brig. E. W. Wade, for their courtesy and help. Also to Brig. N. Cantlie, D.D.M.S., 5th Corps, for his unfailing interest in the surgical arrangements and the time he gave up to taking me round on all my visits to his area.

INVESTIGATION AND TREATMENT OF ENURESIS IN THE ARMY

PRELIMINARY REPORT ON 277 CASES*

BY

P. L. BACKUS, M.D., C.M.McGill, D.P.M.
T/Lieutenant-Colonel, R.A.M.C.

AND

G. S. MANSELL, M.R.C.S., L.R.C.P.
Captain, R.A.M.C.

As the result of considerable success in the out-patient treatment, since the outbreak of war, of nocturnal enuresis in soldiers by explanation, education, and suggestion, a fuller investigation of the problem has been undertaken in hospital. The findings and results of treatment presented below are based on the clinical examination and treatment of 277 unselected cases of nocturnal enuresis consecutively admitted to a military (psychiatric) hospital during the eight months ending Sept., 1943.

Examination

A full physical examination by the medical specialist was made at the time of admission. Special examinations were done on 232 cases as follows:

Bladder-function-test Cystometry.—With due preparation and without local anaesthesia, a No. 8 E soft rubber catheter was passed into the bladder. The resistance to its passage was recorded by an arbitrary standard: ± indicated practically no resistance; +++, strong resistance. The bladder was emptied and boric acid solution at a temperature of approximately 100° F. was allowed to flow into it at a pressure of 20 cm. of water. The base-line was taken as 1 cm. below the level of the pubic arch as the patient lay on the table. The apparatus used was a simple graduated glass container held on an adjustable stand. Fixed levels were maintained by moving the head of the stand up and down. A pressure of 20 cm. was chosen, as being just above that required to bring about an initial stimulus to micturate. This was confirmed by our preliminary tests and is quoted by standard works on physiology: "18 cm." (Sampson Wright, 1940). At this level of pressure, flow was allowed to continue until the patient, having been previously warned, intimated a desire to micturate, when the flow was immediately stopped. A volume reading was taken (see Table I). The patient was then encouraged to relax the bladder by increased control of the external sphincter muscles and an endeavour to create a negative pressure

* A paper read at a meeting of Army psychiatrists held at York in July, 1943.

in the abdomen. This was reinforced by strong suggestion that the bladder was relaxing and getting bigger. When desire lessened or disappeared the flow of solution was allowed to proceed until a second stimulus occurred. A second arrest of flow was made and a volume reading was taken. This procedure was carried out a third time. These two latter readings are recorded as volumes under voluntary relaxation, and were taken at 20 cm. water-pressure in practically all cases. Two final volume readings called distension readings were then made under 40 cm. and 60 cm. water-pressure respectively. In a few cases pressure was raised to 70 and 80 cm. Volume readings above 600 c.cm. were taken in only a few instances. The ability to retain the solution under different pressures was noted, and was recorded on an arbitrary basis: – represented a leakage under 20 cm. pressure; ±, a leakage under 60 cm. pressure; +, a leakage with catheter removed but controllable; ++, good control. At the end of the test the catheter was removed while the bladder was still full and the patient was asked to get off the table, walk across the room, and empty his bladder.

Psychological Examination.—On admission a preliminary psychological examination was made. Special attention was given to the history of the complaint. Periods of remission and relapse were investigated for psychological factors. A personality assessment was recorded at the end of the examination.

Findings

Anamnesis.—The youngest patient was 14 years of age; the oldest 45. Over 50% of the patients were of the ages of 18 to 23 inclusive. The average was 21.33 years. The intelligence score based on the matrix test ranged from S.G. I to V. The mean fell in the S.G. III+ group. The reference of cases for treatment undoubtedly showed selection. Length of service presented no important factor. Medical category was: "A," 80.15%; "B," 10.83%; "C," 9.02%. Bed-wetting at the time of admission was present in all but four cases. Frequency and urgency appeared in 82.67%, and precipitancy in 31.77%. Dysuria was complained of in only 4.4%.

There was a history of the main complaint—namely, nocturnal enuresis—since infancy in 75.81%. Of these, 82.81% had had no remission: though they had many free nights there was no sustained period of freedom. The remaining 17.19% had varying periods of freedom—several months and more. Approximately half of these cases relapsed during a non-service period. The other half relapsed during military service, and the relapse was attributed by the patient to Service conditions. Among the remainder—that is, 24.19% of the whole group—the complaint developed at varying periods in life; 58% occurred before and 42% after enlistment. In presenting these percentages no attempt is made to argue for psychosomatic relations; clinical findings only are recorded.

In the order of their importance the chief factors contributing to the persistence or onset of the symptoms were as follows. In the non-Service group: lack of any training; domestic difficulties in the home and feelings of insecurity related thereto; the so-called "broken home," such as separation of the parents; accidents and operations; sexual traumata or anxiety; the death of one or both parents; and air raids during childhood. In the group that appeared during Service life, failure to adapt to barrack-room life, regimentation, battle experience, accidents—especially injury to the external genitals—and operations were given as the cause of the complaint. 43.32% showed no gross emotional factor, but presented evidence of lack of proper care and training in their difficulties. Definite sexual factors were elicited in a remarkably small number of cases. Masturbation guilt was evident in only three. Of the 125 patients who were married only four gave a history of being affected by the marriage. Promiscuity and fear of venereal disease precipitated an attack in one and a relapse in another two. Punishment for the complaint was incurred in only 14% of the cases.

The school history of the group was a little above the average. The work history was quite the average for the personality type. A history of organic illness was reported in only a small number. There were no cases of overt abnormality of sexuality. Family histories presented very little of importance. A history of enuresis in parent or sibling was admitted in only 21% of cases.

Physical Examination

Physical examination by the medical specialist revealed no abnormality in 92.06% of cases. Of the remaining 7.94%, genito-urinary disease was present as a chronic nephritis and as acute cystitis in one each and as a chronic prostatitis in one. There were four cases of stricture, apparently congenital, as emphasized by Winsbury-White (1941). Disease of the central nervous system presented one case of disseminated sclerosis. The remaining complaints were of an apparently unrelated type—namely, bronchitis, dyspepsia, and "rheumatism." Spina bifida occulta, as an incomplete development of the neural arches of the lower lumbar and sacral regions, was seen in only 13 out of 104 cases routinely *x*-rayed. In none of these was there any evidence of the symptom-complex known as myelodysplasia.

The Bladder-function Test.—The measure of resistance to the passing of a No. 8 E rubber catheter varied from practically no resistance (±) in 17 cases, + in 51 cases, ++ in 141 cases, to the very resistant (+++) in 9 cases. In addition actual obstruction to passage occurred in 14 cases; 10 of these were negotiated by an olive-tipped or coudé gum-elastic catheter or a silver catheter. Four cases had to be sent to hospital for dilatation of a definite stricture. There was no serious complaint about the procedure. Only two refused examination.

Volume readings at the point at which the first stimulus to micturate occurred ranged from 30 c.cm. to 750 c.cm.—the former that of a very small bladder, the latter that of a case of early schizophrenia. Of the series 50% reacted to a volume stimulant between 100 and 250 c.cm. (see Table II).

Table I presents the volume readings of five different cases to illustrate individual findings. Case No. 98 had a small bladder with good initial relaxation. Case No. 79 had a small and very sensitive bladder. His frequency was always severe. Case No. 114 showed a fair average initial relaxation with good powers of voluntary relaxation. Case No. 46 had a bladder of average size but very sensitive. Case No. 163 had a large bladder with a large initial capacity and good powers of voluntary relaxation.

TABLE I.—*Volume Readings of 5 Different Types of Case*

Case No.	Type of Bladder	20 cm. Pressure			Distension	
		1st Stmn.	Voluntary Relaxation		40 cm.	60 cm.
			2nd Stmn.	3rd Stmn.		
		c.cm.	c.cm.	c.cm.	c.cm.	c.cm.
98	Small	160	170	180	230	270
79	„ (sensitive) ..	40	70	80	260	300
114	Average	250	320	370	450	540
46	„ (sensitive)	70	110	140	370	600
163	Large	370	460	560	650+	

TABLE II.—*Volume Readings of the Series*

Volume (c.cm.)	Stimuli (20 cm.)			Distension	
	1st	Voluntary Relaxation		40 cm.	60 cm.
		2nd	3rd		
1– 50	20	6	6	2	1
51–100	52	25	19	3	3
101–150	*51	34	28	7	3
151–200	36	*49	*37	12	5
201–250	32	36	33	25	15
251–300	19	27	35	19	20
301–400	15	32	40	*44	*27
401–500	4	19	26	53	38
501–600	1	2	5	34	60
601–700	1	1	1	30	54
701–800	1	1	1	2	4
801–				1	1
Mean: approx. +	143	198	239	400	500

* 50% + fall in between the heavy lines.

It will be observed that all patients showed some powers of voluntary relaxation after the initial stimulus. In sensitive bladders this was small, but under pressure the ultimate reading was much the same. Table II gives the volume readings of the entire series within 50 c.cm. Very few readings were taken beyond 600 c.cm. Only one reached 800 c.cm., and this was in an early experimental case. This volume was attained under voluntary relaxation with 34 cm. water-pressure. It is of

interest to note that this patient had previously been under hypnotic suggestion for bladder relaxation.

Waves in pressure-flow that were synchronous with respiration were often noted. However, in a number of other cases 39 were definitely recorded; more frequent waves appeared as the flow continued, and became more evident as the point of toleration was approached. It was felt that if apparatus of greater sensitivity were used further cases would have shown these rapid rhythmic waves. These waves are described by Denny-Brown and Robertson (1933), and are considered to be uninhibited bladder contractions, after the work of McLellan (1939).

The measure of sphincter control showed leakage under 20 cm. pressure in 1.29%, under 60 sm. pressure in 10% with the catheter out but able to arrest the flow in 9.48%, and good control in 71.13%. Cystoscopy was done in 130 cases, and there was no report of any serious bladder disorder. It is not likely that abnormal cases would be referred to us for treatment. A pyelogram taken in 14 cases showed no important abnormality.

Psychiatric Examination

In the psychiatric study of the series it was found convenient to divide the cases into six main personality types according to the outstanding characteristics of each. As must be expected, there was a considerable admixture of two or more types. The largest group—namely, 48.01%—fell into what might be called a timid, immature, dependent, often frustrated type. Some of these showed definite schizoid trends. They came from the so-called "broken home" situations, or from homes where there had been much emotional stress in early life. On the whole, this group revealed marked evidence of "love deprivation" in childhood; a considerable number, however, showed strong "mother fixation." They nearly all gave a history of bed-wetting since infancy, and without remission. In other words, their bladders had wept for them in all their difficulties, while they themselves had refused or failed to grow up. If members in this group were allowed to go on leave while in hospital they reacted badly, and almost invariably relapsed when at home. The next largest group—namely, 27.07%—were of quite an average type of personality. They presented no important emotional stress in their history of childhood or later life. They, too, were largely chronic bed-wetters. It is of special interest to note that a great majority of these patients showed a considerable degree of real indifference to their trouble. Superficially they appeared anxious for treatment, but on deeper investigation the indifference became evident. They required much firmness in treatment to get them to make a serious attempt to help themselves. Having slept in wet diapers all their lives, they appeared to feel no great need for a change. The third group—10.49%—were those of a reaction type showing compensatory aggression. The fourth—6.14%—were what might be called pure aggressives; the fifth—5.77%—were essentially psychopathic personalities, and in some cases gave a psychotic family history. The remaining small group of 2.52% were predominantly obsessional in type.

Treatment

By the time the preliminary investigations were completed the patients had already been placed on suitable waking regimes. Fluids were prohibited after 6 p.m. The first move in active treatment was to get the patient to make as frank a statement as possible about his attitude towards his complaint. Following this, in terms easily understood by him, a careful explanation was given of bladder function and control. This was supplemented by a sketch on paper or by the simple device of interlocking the fingers of the two hands to represent the bladder wall. This was related to normal development and control in the average individual. It was conceded that a child might take three or four years to attain full control, and so it was understood that the patient might not achieve this in a night or two. That a prolonged lack of control had built up an attitude in which the patient had become hardened to his complaint was acknowledged; but, in view of his expressed wish to attain control and as he had an adult mind to bring to bear upon the problem, success was most definitely expected. The aim was to achieve normal bladder control, and the consideration of this problem was based upon the known physiology of the bladder.

The aim and emphasis in treatment were all towards bladder control in its various aspects. Negative suggestion was scrupulously avoided. General fears of wetting the bed or finding oneself in a difficult situation were purposefully replaced by the positive expectation of holding the water under all circumstances. The bladder-function test formed a valuable practical basis for the discussion of the problem with the patient. A bladder of normal size with satisfactory sphincter control could not be denied. What was still more important was the knowledge that good powers of voluntary relaxation were present. When this could not be denied, emphasis upon a need for greater determination in certain aspects of control was self-evident.

The first exercise was therefore maintenance of sphincter control in the daytime. If the sphincter was weak, exercises in holding the water were carried out. The use of ephedrine as an adjuvant may be tried, but in our experience the results were disappointing. The second exercise was voluntary relaxation of the bladder—"Just as you did in the examination." With every initial urge to micturate, while the sphincter is held, the bladder is made to relax with the assistance of negative abdominal pressure by raising of the diaphragm and by strong auto-suggestion of bladder relaxation. This is best understood by trying it on oneself during a time of need. It was interesting to note how many chronic cases of frequency and urgency showed marked improvement under these exercises. Drugs such as atropine or belladonna may be used, and should be carried to full tolerance. These were also found of indifferent value. A dry mouth was a distinct handicap when the patient was restricted in water intake. Medical treatment has now been largely abandoned because of its doubtful value, which experience is supported by the findings of Browne and Ford-Smith (1941).

Nocturnal control was put on the same basis as day control, and was fortified by auto-suggestion at the time of going to sleep. Fears of accident were replaced by strong suggestion of positive control of the sphincter muscle. A "sleep tight" decision, so far as concerns that muscle, was the routine. The rest of the bladder, however, was expected to relax and to go to sleep just as the rest of the body did. This double suggestion of a tight sphincter and a relaxing bladder was given strong and repeated emphasis. It can with great benefit be made the basis of part of the group therapy for a ward. During subsequent psychiatric interviews this procedure was re-emphasized and the patients' determination stimulated. As soon as evidence of control appeared, the waking times were reduced in number and the procedure of "self-waking" was introduced if needed.

This new instruction was based on the idea that while the conscious mind was asleep the deep or unconscious part of the mind would remain in control. Emphasis was placed upon a determination that the latter would maintain continuous control over the sphincter, so that any attempt to force it open by a contraction of the bladder would result in its reflex closure of still greater intensity, such as occurs normally during the daytime. It was stressed that this increased contraction would persist up to a point of such acute discomfort in the bladder that it would wake the patient up. This, after all, is the normal function. One patient who captured the idea of the importance of this mechanism said that he was always waked by a feeling that a knife was being stuck into his bladder. He never wakened of his own volition before. The aim is so to focus the attention on an increase of bladder tone, so to sensitize the individual to it, that this normal mechanism will operate regularly and without failure. In adults this seems to be a much more useful procedure than the mechanical methods of waking, such as the use of the penile clamp of Baretz (1936) or attempts to condition the patient by use of an electric pad that when wet will ring a bell, as devised by the Mowrers (1938). In these the stimulus comes too late.

As treatment proceeded one emphasized the successes and disregarded the failures. Analogies, such as learning to skate

were presented in which the ability to stay on one's feet, rather than the number of falls one sustained, was considered an index of achievement: the brook having been leapt once, it could be leapt again. Reference to the presence of any fear before the leap always brought the response, "I would land right in the middle"—and so they do, and get wet on both occasions. Any tendency to relax this determination is evidence of the need for immediate and further psychiatric investigation, and sometimes discipline.

General psychotherapy was given throughout the training. This ranged from simple reassurance and suggestion in the mild and more stable type to "depth therapy" by directive reductive methods in the more severe and unstable cases. The use of hypnosis early in treatment was largely abandoned, and was replaced by systematic education under conscious control. We do not think we achieved anything under hypnosis that we have not achieved since without it. Ancillary treatment in hospital was that of the training wing, to which cases were transferred at an early date. Here they received regular physical, para-military, and diversified occupational training. When day and night control was established, posting to duty was arranged. The necessity for posting some of the men to new units, to avoid embarrassment, was kept in mind.

Difficulties in Treatment.—Difficulties increased with age. Of 60 patients of 30 years and over only one-third went back to duty. The same percentage applies to those of low mental category—namely, S.G. V. Physical category in itself had no material bearing. Chronicity, and especially an associated psychoneurosis, made treatment more difficult. A bladder which showed less than 300 c.cm. capacity with 60 cm. water-pressure was always found most difficult to treat.

Disposal

Up to Nov. 25, 1943, disposal of the 277 cases of the series was as follows:

Discharged from hospital to duty direct	113
Returned to duty—special posting	40
Discharged from Army essentially because of a small bladder (under 300 c.cm. with 60 cm. pressure)	53
Discharged because of nocturnal enuresis	13
" " associated neurosis	23
" " organic disease	4
Death (accidental drowning)	1
Transfer to another hospital (organic disease)	1
Still in hospital	29

Follow-up

The follow-up of this series is necessarily very incomplete. Reports have been received from only 40 cases. Of these, 31 are on full duty, efficiently and willingly, with satisfactory bladder control—3 of them after six months; 4 are on light duty, efficiently and willingly, with satisfactory bladder control; 2 have been discharged from the Service; and 3 have been readmitted to hospital for further treatment. In addition a personal communication has been received from 4 more cases, expressing difficulties.

Conclusions

The older the patient and the poorer the intelligence, the greater the difficulties in treatment. Physical disabilities were negligible in this series, excepting the small bladder. This is in contrast with the 13% of organic cases mentioned by Stockwell and Smith (1940) in their study of 100 children, and the findings of Winsbury-White (1941) in children in whom cystitis and congenital stricture appeared to be the chief causal factors. Whether the bladder was anatomically or physiologically small was not determined. It is suspected that the size was often the result of increase in muscle tone. A follow-up of these cases, with further cystometric examinations, is needed before any decisions can be reached. A few patients with a small bladder were discharged without much treatment, but the great majority of them were given prolonged and intensive therapy without improvement. One patient remains in hospital, one was discharged after the return to service, and only two, returned to duty, are carrying on.

Even though the history of the enuresis with precipitancy was in nearly all cases similar to that described by Russell Brain (1940) and others in spina bifida occulta, this latter condition appeared to have no effect upon the treatment. Of the 8 cases of spina bifida 8 were returned to duty; the follow-up report of one of these is very satisfactory. Of the 5 discharged Category E, 4 had bladders under 300 c.cm. capacity and the other was a severe psychoneurotic with low intelligence. This supports the view of Karlin (1935), who considers the defect unimportant unless there is evidence of myelodysplasic change or extensive neural-arch defect.

The problem of treatment, therefore, is essentially psychological. In this series at least 27% gave no evidence of difficulty other than lack of proper training in childhood. The same difficulty applied to a considerable proportion of the rest, but other factors were also present. Evidence of bladder reaction of the infantile type was seen in many of these cases, as mentioned above. In this group one agrees with Hamill (1940), who considers it "a refusal to accept responsibility," and the Mowrers (1938), who agree with the emphasis of most that it is a continuation of inadequate training. In this type of case in which control appears to be delayed we would agree with Wainwright (1941) that definite treatment towards establishing control should be undertaken. On the other hand, normal inhibitory impulses establish themselves in the vast majority of children, and for other psychological reasons a too early interference or too aggressive training should not be undertaken as his concluding paragraph would suggest. In view of the fact that nearly 50% of the patients in this series showed immaturity and dependence, psychotherapy directed towards emotional release and maturation is important.

Suitability for treatment in the Army therefore depends on: an age preferably under 30 years, fair intelligence, a bladder of more than 300 c.cm. capacity with 60 cm. of water-pressure, and evidence of voluntary powers of relaxation. The personality type should include a reasonably good attitude towards further service. All cases in which the findings are favourable are suitable for out-patient treatment in the unit. An educative routine, as set out above, will produce satisfactory results in a considerable percentage of cases. Where there are no adverse psychiatric factors, admission to a general hospital for routine treatment may be necessary. If this fails, or if psychiatric factors are present, the case should be referred to a psychiatrist with a view to admission to a psychiatric hospital for treatment.

Summary

A psychiatric study has been made of 277 unselected cases, and a cystometric examination of 232 of these. The average age was 21.33 years; mean intelligence fell in the S.G. III + group. Length of service and medical category were unimportant. 75% were bed-wetters from infancy, and four-fifths of these had had no remission.

Various factors are set out as possible causes: physical disorders appeared in under 8%; spina bifida occulta in just over 10% of those *x*-rayed; just under 25% showed small bladders under cystometry, with varying degrees of voluntary control.

Psychiatric investigation presented six main personality types. In order of predominance they were: the timid, the average, the compensatory aggressive, the pure aggressive, the psychopath, and the obsessional.

A form of treatment is outlined and difficulties relating thereto are mentioned.

A report of a small follow-up is given.

Observations and recommendations are set out.

We wish to express thanks to our late commanding officers, Lieut.-Col. J. D. W. Pearce and Lieut.-Col. R. J. Rosie (still C.O. to one of us) for permitting us to do this work and for their great interest and assistance; to Major H. G. McGregor and Capt. S. T. Lewsen, Medical Specialists, for their assistance and co-operation; to various members of the hospital staff for their unfailing assistance; and to Brig. J. R. Rees, whose continued interest and encouragement have kept us on the job in the midst of other somewhat arduous duties. We wish also to thank Brig. J. S. McCombe for permission to publish this paper.

REFERENCES

Baretz, L. H. (1936). *Urol. cutan. Rev.*, **40**, 321.
Brain, W. R. (1940). *Diseases of Nervous System*, Oxf. Med. Publ., p. 654, London.
Browne, R. C., and Ford-Smith, A. (1941). *British Medical Journal*, **2**, 803.
Denny-Brown, D., and Robertson, E. G. (1933). *Brain*, **56**, 179.
Hamill, R. C. (1940). *Diseases of the Nervous System*, **1**, 272.
Karlin, I. W. (1935). *Amer. J. Dis. Child.*, **49**, 125.
McLellan, F. C. (1939). *The Neurogenic Bladder*, pp. 101, 146, Springfield, Ill.
Mowrer, O. H. and W. M. (1938). *Amer. J. Orthopsychiat.*, **8**, 436.
Stockwell, L., and Smith, C. K. (1940). *Amer. J. Dis. Child.*, **59**, 1013.
Wainwright, S. P. (1941). *J. med. Ass. Alabama*, **10**, 408.
Winsbury-White, H. P. (1941). *Lancet*, **2**, 331.
Wright, S. (1940). *Applied Physiology*, Oxf. Med. Publ., p. 235, London.

POST-OPERATIVE CHEST COMPLICATIONS IN GASTRIC SURGERY

BY

T. W. MIMPRISS, M.S., F.R.C.S.

AND

F. G. ETHERIDGE, B.M., D.A.

(From Botleys Park War Hospital)

The purpose of this communication is to draw attention to the frequency of post-operative pulmonary complications in gastric surgery and also to assess the importance and severity of such complications. With this object, the post-operative chest condition of 100 consecutive patients on whom partial gastrectomy has been performed is reviewed. In submitting figures of the incidence of pulmonary complications for an operation such as partial gastrectomy it is necessary to give some information about the condition for which the patient was advised to undergo operation, together with the operative mortality. Also, the standards by which the pulmonary complications have been assessed must be stated.

Condition and Operative Mortality

It is generally recognized that the operation is more difficult if it is done for a peptic ulcer for which a previous operation has been performed, and more severe if it is done for an ulcer which is bleeding or for malignant disease. We have therefore classified our patients into four groups, stating the number of patients in each group, with the fatalities. (1) Those suffering from peptic ulceration on whom surgery had not previously been employed, apart from the suture of a perforation. In this group were 78 patients, one of whom died. (2) Those suffering from peptic ulceration on whom surgery had previously been attempted. There were 11 patients in this group, two of whom died. (3) Those suffering from peptic ulceration complicated by acute haemorrhage: 5 patients; one death. (4) Those suffering from carcinoma of the stomach: 6 patients; no fatalities.

It will be seen, therefore, that these operations were performed for the usual indications and were not confined to any special group of patients; and that of the 100 patients four died.

Assessment of Pulmonary Complications

Our practice has been to rely upon physical examination of the chest as a routine during the first two or three post-operative days. When any abnormal physical signs have been found, or a rise in temperature, pulse, or respiration rate suggests the possibility of a pulmonary complication, radiography has been carried out. In fact, 45 of our 100 patients have been *x*-rayed within the first few days of operation.

The primary types of immediate pulmonary complication encountered have been: (1) bronchitis, (2) lobar atelectasis, and (3) lobular or patchy atelectasis. We have diagnosed bronchitis in patients who after operation have had a productive cough with moist sounds in the lungs, but who on *x*-ray examination have shown no abnormality. The term "lobar atelectasis" is used when the whole of one or more lobes is atelectatic—a fact which can be well demonstrated on a radiograph.

The frequency of the diagnosis of lobular or patchy atelectasis, as Brock (1936) has pointed out, depends very much on whether or not the surgeon is looking out for this condition. In our experience it is by far the most common complication after operation. In most cases physical examination showed that the lower part of the chest on one or both sides was expanding somewhat less fully than normal, and auscultation revealed a poor air entry with some adventitious sounds. The temperature would be raised, often not more than to 100°, and the patient would feel that he wanted to cough but had some difficulty in doing so. He was encouraged to cough during the first or second day, bringing up some mucopurulent sputum. Following this the pulmonary condition rapidly improved and returned to normal. A radiograph of the chest in a patient of this type has shown slight elevation of the diaphragm together with slight patchy increase in density of the lung at one or both bases. In none of our cases in this group was any mediastinal shift detected either by examination or by *x* rays. In a few patients this condition progressed to some more serious complication, such as bronchopneumonia; a fuller description of these patients is therefore given.

Incidence of Post-operative Pulmonary Complications

Working on the lines indicated above, we find that 34 of our 100 patients are classified as suffering from a post-operative pulmonary complication. Of these, 4 had bronchitis, 1 lobar atelectasis, and 29 lobular atelectasis.

Acute Bronchitis.—All these 4 patients were suffering from chronic bronchitis and had an exacerbation after the operation. In three the complication was not serious and did not prolong their stay in hospital; but in a man who had chronic fibroid phthisis of both apices together with chronic bronchitis the exacerbation of the bronchitis led to reactivation of tuberculosis and prolonged hospital treatment. In only one of these four patients, therefore, was the complication serious.

Lobar Atelectasis.—We recognized complete atelectasis of the lobe in only one patient. He was a man of 45 who had a collapsed right lower lobe which failed to re-expand rapidly. Twenty-eight days later a radiograph still showed that the lobe was not fully expanded. Bronchoscopy and aspiration of the secretion were carried out, and after this the lobe re-expanded. This complication prolonged his stay in hospital by some weeks, and must be considered a serious one.

Lobular or Patchy Atelectasis.—Of the 29 patients in this group, the right lower lobe was involved in 12, the left lower lobe in 10, and both lower lobes in 7. In 25 the complication was a mild one and for several days they suffered the discomfort associated with a post-operative cough; but the condition rapidly cleared, the lung re-expanded, and the cough and sputum ceased. In none of these cases was the stay in hospital prolonged owing to this complication, and it seems that the post-operative lobular atelectasis amounted to an uncomfortable nuisance rather than a dangerous complication. In the remaining four cases, however, this initial complication was attended by more serious sequelae, and was responsible for the death of a patient. These four cases are reviewed in detail:

Case 1.—A man of 69 who had a patchy atelectasis of the left lower lobe following an operation in the winter, when respiratory infections after influenza were frequent. He proceeded to bilateral septic bronchopneumonia and died on the eighth post-operative day. His death must be attributed to the pulmonary condition, as necropsy showed that there was no trouble below the diaphragm.

Case 2.—A man of 57 in whom operation was followed by a patchy atelectasis of the left lower lobe. This subsided rather slowly and his cough had not entirely settled down on the tenth day, when an urgent operation for the removal of a gangrenous appendix with spreading peritonitis was carried out. He made a satisfactory recovery from this second operation, but his pulmonary condition was made much worse and consolidation of the left lower lobe followed. This proceeded to an empyema, for which surgical drainage was done. His stay in hospital was prolonged by many weeks, but he ultimately made a satisfactory recovery. He was unfortunate to suffer from an attack of appendicitis so soon after a major abdominal operation.

Case 3.—A man of 59, known to have a large chronic lesser-curve and posterior-wall ulcer, was operated on as an emergency case on the fourth day of a severe haemorrhage. His condition was very bad in spite of repeated transfusions. Patchy atelectasis of the right lower lobe was present after operation, and he died on the eighth post-operative day from peritonitis and bilateral bronchopneumonia. Necropsy showed that the primary cause of death was a spread of peritonitis from the floor of the ulcer; the persistence and exacerbation of the pulmonary condition were almost certainly due to this peritonitis. His death therefore cannot really be attributed to a chest complication.

Case 4.—A man of 47 with a very high posterior-wall and lesser-curve ulcer for which two previous attempts at cure had been carried out elsewhere. A very high partial gastrectomy was performed. The surrounding tissues were indurated, and it seemed impossible to obtain a satisfactory anastomosis between the cardiac end of the stomach and the jejunum. A drain was therefore placed down to the anastomosis and the floor of the ulcer. He developed a patchy atelectasis of the left lower lobe and also a left subphrenic infection, and died on the tenth post-operative day. Necropsy showed bilateral bronchopneumonia and subphrenic infection ro

the anastomosis. It seems that in this case death was due to the inflammation round the anastomosis, which was largely responsible for the pulmonary complication.

It will be seen, therefore, that in only one of these four cases in which lobular atelectasis proceeded to bronchopneumonia was this sequel unconnected with the trouble in the peritoneal cavity.

To sum up: in the whole series of 100 patients there were 34 whose post-operative progress was complicated by a pulmonary abnormality. Of these, 28 suffered from a mild and transient complication, but six had severe pulmonary disease. Three died, but only one death was directly due to the chest complication. Of the three who recovered, the severity of the pulmonary condition was in one case due to peritonitis following an attack of appendicitis. It will be seen, therefore, that in this series of 100 patients, six developed a serious pulmonary complication—three being attributable to post-operative peritonitis and three occurring in patients whose condition was otherwise satisfactory.

Notes on the Series

The factors influencing post-operative pulmonary complications were excellently reviewed by Brock in 1936, and we will only comment on a few points which we have noted in our series.

1. The Operation

It is, of course, well known that upper abdominal operations are chiefly responsible for post-operative pulmonary complications in that diaphragmatic respiration is embarrassed. This embarrassment is likely to be accentuated by local peritonitis or post-operative distension of the stomach. Probably the most certain way to produce a post-operative pulmonary atelectasis is to do an operation which gives rise to a severe peritoneal inflammation. As we have just noted, necropsy showed that two of our patients had septic bronchopneumonia, and in our opinion this was secondary to peritoneal inflammation. We avoid any chance of post-operative distension of the stomach by the use of an indwelling Ryle's tube for at least the first post-operative day.

It has been suggested that a transverse abdominal incision allows the patient either to cough or to breathe deeply after the operation with less discomfort than is the case when a vertical incision has been employed. On 35 occasions we have made a transverse incision, and 12 of these patients suffered from post-operative pulmonary complication, while 23 remained clear. It does not seem, therefore, that a transverse incision, as employed by us, has any influence on the incidence of complications. What is much more important, in our opinion, is that whatever incision is made should be very well and strongly sutured: it is then easier for a patient to cough after operation. At the close of the operation the dressing is held on by elastoplast, applied so that it does not restrict respiratory movement.

2. The Anaesthetic

Our view is that the type of anaesthesia influences the severity of these complications rather than the incidence. A patient who develops lung complications after two and a half hours of third- or fourth-plane narcosis will be less able to combat them than a patient who has been in the second plane for a similar period.

In order to provide the requisite relaxation for gastric surgery and at the same time maintain the patient in the first or second plane, some sort of regional block is necessary. We use bilateral intercostal block of the sixth to the eleventh nerves inclusive. The solution employed is 1/1,000 anethaine with adrenaline. No splanchnic block, in our opinion, is necessary with inhalation anaesthesia, and for some time now we have discarded it. Premedication is by omnopon-scopolamine, the average dose being omnopon gr. 1/3, scopolamine gr. 1/150. The narcosis is induced by pentothal and is maintained with cyclopropane, administered by a large-bore endotracheal tube and to-and-fro absorption. The second plane is quite deep enough for the whole of the operation, except for intubation and for traction of the stomach to free the upper end; the third plane is entered for these two procedures. This technique enables good ventilation to be maintained throughout, and since breathing is mainly intercostal in character this does not embarrass the surgeon.

Nosworthy (personal communication) has pointed out that the bronchial spasm following intubation in light anaesthesia should be avoided in patients in whom pulmonary complications are feared. It was our practice to give a decicain lozenge 20 minutes before operation and to intubate after a pentothal induction. This process gives rise to considerable reflex bronchospasm and can be avoided by deepening the anaesthesia to the third plane with cyclopropane and ether if necessary. Up to now the results of this method have been encouraging, but the cases have been too few for conclusions to be drawn.

Under the technique described above the patient is as fit as possible after the operation; fall in blood pressure and sweating do not occur. Aeration has been maintained throughout with a mixture containing a large percentage of inert gas (either air or helium). We are of the opinion that the agent employed for the narcosis is not of paramount importance; a few of these cases were done with ether, and the post-operative condition was satisfactory. We prefer cyclopropane because of its flexibility and the lack of toxicity when used in the lighter planes, but we have no hesitation in supplementing with ether should necessity arise.

3. The Post-operative Condition of the Patient

If the surgery and anaesthesia are of good quality the patient's post-operative condition should be good and he should be reasonably comfortable. This obviates the need for frequent injections of morphine and therefore avoids subsequent depression of respiration. We have tried to keep our patients both lively and comfortable after operation and to avoid the use of morphine as much as possible. It is, however, a fact that of five patients operated on for haematemesis only one developed a post-operative chest complication; yet these five patients received much more morphine, both before and after operation, than the average patient. We are now trying the effects of giving more of that drug after operation.

4. Effects of Sex

Of the 100 patients admitted for operation, 14 were females, four of them suffering from pulmonary complication. This shows no striking alteration in incidence compared with that in the male patients; but the figures, of course, are not large enough to enable one to draw any conclusion. As most of our patients have been on medical treatment for some time and their smoking has been reduced or stopped altogether, it is possible that this may explain why in our series the incidence has been about the same in both sexes.

5. Seasonal Incidence of Chest Complications

Of four patients with post-operative bronchitis, three were operated upon in the winter and one in the summer. Of 29 with post-operative lobular atelectasis, 16 had their operations in the winter and 13 in the summer. Of the 66 who had no pulmonary complication, 32 were operated upon in the winter and 34 in the summer.

It is, of course, well recognized that a patient suffering from chronic bronchitis is a better operative risk in the summer than in the winter. Apart from this, we do not think that in this country the incidence of complications is to any extent affected by the season; but the presence of an epidemic, such as influenza, seems to increase the severity of any pulmonary complication which may appear, and may lead to a troublesome infection in a partially atelectatic lobe. It is also very important, of course, to postpone operation should a patient show any evidence of respiratory infection.

6. Treatment of Pulmonary Complications

Prophylactic Treatment.—Satisfactory prophylactic treatment, of course, is what one wishes to obtain. We aim to keep the patient active and his lungs fully aerated during the post-operative period. With this end in view we give pre-operative breathing exercises to each patient so that he will know what is expected of him after the operation. We endeavour to keep his condition good by the performance of a sound operation under a well-administered anaesthetic and to have him in as fit a condition as possible shortly after the operation

is completed. This enables one to avoid heavy or prolonged sedation. Post-operative breathing exercises are restarted the day after operation, and in most cases heavy percussion of the thorax is allowed to be carried out by the masseuse during the first post-operative day. Movements in bed are encouraged, and our patients are rolled for washing purposes during the first post-operative day, unless their condition is unusually poor. Clinical examination of the chest is carried out daily as a routine for the first few post-operative days, for both diagnostic and therapeutic purposes. We believe that the movement and the activity involved in the clinical examination of the chest have a useful therapeutic effect. Coughing is encouraged by all those who deal with the patient. We endeavour to avoid infection in a collapsed lobe by postponing operation in any patient who has an upper respiratory infection or is in any way unfit. We have also been giving 3 g. of sulphathiazole by mouth three hours before operation, followed by 1 g. four-hourly after its completion, for 24 hours. There is no evidence whatever that this measure is of any use, but it seems reasonable to suggest that it may lessen the risk of infection in a lobe which has some stagnant secretion in the air passages.

Curative Treatment.—Should a pulmonary complication be diagnosed, we rely on frequent breathing exercises and heavy percussion of the chest to assist coughing and expectoration of sputum. We try to keep the patient as active in bed as possible, as movement often forces an unwilling patient to cough. We have occasionally used suction through a tracheal catheter, both as a prophylactic at the end of operation and as a therapeutic measure, when there appears to be difficulty in coughing. It certainly seems to assist subsequent expectoration. Up to date we have not subjected patients on whom a partial gastrectomy has been performed to bronchoscopy within the first few post-operative days. We have, however, used this for patients who have undergone rather less severe operations, and are prepared to consider it in suitable cases in the future.

Discussion

One of the great difficulties in discussing post-operative pulmonary complications is to draw a line between what is a complication and what is not. Hypoventilation, as described by Beecher (1933) and others, is probably universal in patients after this operation. Henderson (1935) refers to "collapse without symptoms" as almost a normal sequel to major surgical operations.

In this series we *x*-rayed only those who showed some signs on physical examination. In a second series we are now *x*-raying every patient as a routine during the first or second post-operative day. It seems likely that in assessing this second series we shall find a rather higher percentage of mild patchy atelectasis, which was almost symptomless but was apparent on a radiograph if looked for. Probably few patients have a post-operative course entirely free from cough and sputum, and if one watches carefully enough some slight pulmonary abnormality can be detected. One's complication rate may therefore rise as time goes on, but this should be of little importance if the awareness of these slight abnormalities leads, as it should, to a reduction in the incidence of the more severe post-operative complications. In a second series we rather expect to show a greater incidence in the mildest type of patchy atelectasis.

We believe, however, that the avoidance of the more severe types of post-operative chest complication depends largely on the satisfactory post-operative condition of the peritoneal cavity. No amount of post-operative treatment will prevent those severe chest complications which are due to an unsatisfactory post-operative peritoneal condition.

Summary

The post-operative chest complications in 100 consecutive cases of partial gastrectomy have been reviewed.

A pulmonary complication was detected in 34 cases.

The influence of various factors is discussed.

References

Beecher, H. K. (1933). *J. clin. Invest.*, **12**, 651.
Brock, R. C. (1936). *Guy's Hosp. Rep.*, **86**, 191.
Henderson, Y. (1935). *Bull. N.Y. Acad. Med.*, **11**, 639.

TWO VARIETIES OF LEUKAEMIA IN ONE FAMILY

BY

R. W. MEIKLE, M.B., Ch.B.

House-physician, Western Infirmary, Glasgow

(From the Gardiner Institute of Medicine, University of Glasgow)

The aetiology of leukaemia is so obscure that all facts which might ultimately be of value in solving this problem seem worth recording. Leukaemia occurs sporadically, and familial incidence is rare (Whitby and Britton, 1942); hence the presentation of the following notes of the disease, which apparently involved different types of white blood cell, in a brother and sister of middle age. The two patients lived in the same house; there were no other members in the family, and there was no family history of other cases of leukaemia.

Case I

Mr. A., aged 46, was admitted to hospital on Jan. 20, 1942, complaining of a sore throat of six weeks' duration, with loss of weight and general weakness, slowly developing for a number of months. The chief clinical features were marked pallor, tonsillar enlargement with yellowish exudation but no obvious ulceration, cervical adenitis, and slight enlargement of the liver; the spleen was not palpable. Fever up to 100° F. was noted. The pulse rate was 120 to 140 a minute. Death occurred five days after admission, but a necropsy was unfortunately not permitted.

Case II

Miss A., aged 43, entered hospital on April 22, 1944, some two years after her brother, complaining of sore throat, spontaneous bruising over forearms and abdomen, a single epistaxis, and menorrhagia; there were also fatigue and headache of four months' duration. The chief clinical features were a sallow colour of the skin, ulceration of the throat with yellowish-white sloughs on the soft palate and tonsils, a single enlarged lymphatic gland at the right angle of the jaw, subcutaneous haemorrhages on the forearms and abdomen, and microscopic haematuria. Neither liver nor spleen was enlarged. There was fever up to 105° F., with rigors every evening. Pulse rate, 110 to 160 a minute. This patient died in coma six days after admission, and again no necropsy was possible.

Haematology

In Case I only a single blood count was done and a supply of films was taken for staining. The following figures were recorded: erythrocytes, 2,000,000 per c.mm.; haemoglobin, 55%; colour index, 1.4; leucocytes, 201,000 per c.mm. Differential count (1,200 cells): monocytes, 86.8%; monoblasts, 2.5%; lymphocytes, 7.4%; polymorphs, 1.7%; myelocytes, 1.6%. Nucleated red cells were also present, numbering 16 per 1,000 w.b.c.

It is to be noted in the differential count that there was a great preponderance (86.8%) of cells regarded as monocytes. These are contrasted later with the abnormal white cells found in the sister's blood. No sternal puncture was carried out.

In Case II two blood counts were done—on admission and again five days later. Sternal puncture was also performed. Blood examination (April 22, 1944): erythrocytes, 3,110,000 per c.mm.; haemoglobin, 51%; colour index, 0.8; leucocytes, 88,000 per c.mm. Differential count (1,000 cells): myeloblasts, 92.6%; lymphocytes, 6.6%; polymorphs, 0.8%. No promyelocytes or myelocytes were noted. On April 24 sternal puncture was performed; examination of the marrow confirmed the findings in the peripheral blood. Leucoblastic cells greatly exceeded erythroblasts in number, and again 92% of the marrow cells were regarded as typical myeloblasts.

Discussion

Apart from the interest of leukaemia of acute type occurring in middle age and affecting brother and sister living in the same house, the question whether both suffered from the same or from different haematological varieties of the disease requires discussion.

In the blood film of Case I 86.8% of the cells were undoubtedly typical monocytes, the majority of which, however, contained a convoluted nucleus, and were, in fact, identical with blood histiocytes as described by Levine (1934). One of these was seen to have ingested a red cell. The 2.5% of cells regarded as monoblasts contained large, round, densely staining nuclei, some of which showed one or two nucleoli; the cytoplasm, Leishman-stained, was blue and relatively small in amount. It is to be remarked that myelocytes and mature polymorphs together accounted for only 3.3% of the white cells

Lymphocytes, mainly of the small variety, made up the remainder. A hyperchromic type of anaemia affected the red blood cells, the colour index being 1.4. Haematologically, therefore, the signs were those of monocytic leukaemia. Reference to the literature, however, indicated that these facts alone were not conclusive evidence in favour of such a diagnosis. The question arose whether the brother had died not of monocytic leukaemia but of a myelogenous leukaemia, which had been in the monocytic phase at the time of his arrival in hospital (Kracke and Garver, 1937). The absence of a marked myeloid reaction was regarded as a strong point in the support of the former diagnosis.

The striking feature of the blood picture in Case II was the presence of a high percentage (92.6) of mononuclear cells, each of which, when stained by Leishman's method, consisted of a round, eccentrically placed nucleus, often containing nucleoli, and blue agranular cytoplasm; many were undergoing division. These cells were considered to be myeloblasts. Only 0.8% of the leucocytes were polymorphonuclear, and the remaining 6.5% were lymphocytes.

These findings, together with those in the bone marrow, clearly constituted a blood picture of myeloblastic leukaemia.

Conclusion

Two cases of very acute leukaemia, occurring in a brother and sister living in the same house, are reported. The sister's illness developed two years after her brother's death.

In the brother, a study of blood films strongly suggests the diagnosis of monocytic leukaemia, whereas the sister undoubtedly suffered from acute myeloblastic leukaemia.

I am very grateful to Prof. J. W. McNee for helpful advice and criticism in the preparation of this paper and for permission to publish the second case. To Dr. Forbes Walker, Ayr, I am indebted for the clinical details of the first case.

REFERENCES

Kracke, R. R., and Garver, H. E. (1937). *Diseases of the Blood and Atlas of Hematology*, p. 329, Philadelphia.

Levine, V. (1934). *Folia Haemat. Lpz.*, **52**, 305.

Whitby, L. E. H., and Britton, C. J. C. (1942). *Disorders of the Blood*, p. 378, London.

SUPERFICIAL GANGRENE IN ADOLESCENT DIABETES

BY

H. WHITTAKER, M.R.C.S., L.R.C.P.

Assistant Medical Officer, Leatherhead Emergency Hospital

Gangrene in the young diabetic is a rare event. Joslin (1940), the greatest authority on clinical diabetes, describes it as an accompaniment of arteriosclerosis, therefore developing almost entirely in the arteriosclerotic era of life. Of the few cases recorded in young people, some are determined by rare vascular accidents, disease of the blood vessels, or overwhelming infection of devitalized tissue. Kiefer, Brigham, and Wheeler (1926) reported frank gangrene of the entire left foot due to infarction in a youth aged 19 who was in diabetic coma complicated by pneumonia. Gangrene of the nose in three children under 10 years of age was described by Bowers (1924). Carbuncle, essentially a gangrenous lesion, may be a grave complication of diabetes at any age.

Recently we have seen two cases with a pathology obviously differing from the above rarities and from the common gangrene of the extremities of elderly diabetics. With their description is included that of a third case almost meriting the bizarre title "dermatitis artefacta gangrenosa diabetica."

Case I

A boy aged 15 who had suffered from diabetes for three years was admitted to hospital on April 25, 1944, in coma. At an out-patient clinic on April 18 his diabetes had seemed to be well controlled by two doses of soluble insulin, with a noon blood sugar of 143 mg. per 100 c.cm., slight glycosuria, and no ketosis. Three days later an illness labelled "gastritis" had started with much vomiting. Insulin, at first reduced, had later been omitted, and coma had inevitably ensued.

No complication was found on clinical examination. The coma was profound, with air hunger, ketosis, and extreme dehydration. The pulse rate was 140, the temperature 98.2°, and the respiration rate 30. The blood pressure, at first 90/60, later fell to 80/50. A specimen of urine could not be obtained for some hours, but then showed gross amounts of sugar and ketones, with a strong reaction to ferric chloride. The blood sugar attained the notably high level of 1,320 mg. per 100 c.cm. Despite his coma the boy was so intensely restless that the insertion of a cannula into the right internal saphenous vein with splinting of both legs offered the only chance of maintaining the necessary intravenous therapy over a long period. This seemed a better arrangement than splinting of the arms.

Although four-hourly attention to the back was scrupulously observed, a large area of gangrene, involving the upper part of the right buttock, suddenly appeared on the second day of splinting. The surrounding skin was red and indurated, and over the blackened skin of the gangrenous part small vesicles containing serous fluid arose. Separation at the edges was apparent by the third day, but a week later secondary infection had spread to the underlying fatty tissues and an abscess in the right buttock was evacuated. Culture of the pus produced *B. coli*. Consciousness was regained on the third day, and a complete recovery made from the coma. Fig. 1 shows the gangrene as it appeared on May 15.

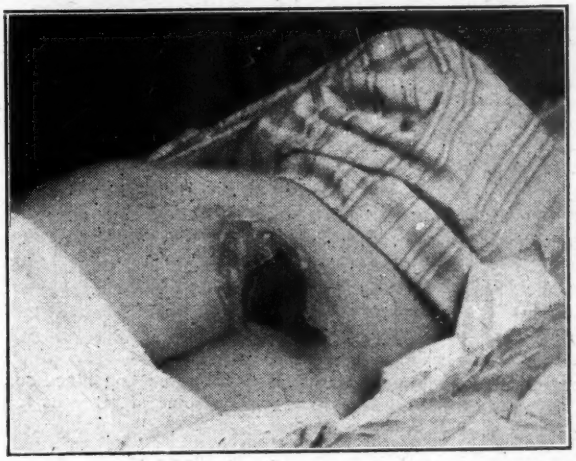


FIG. 1.—Case I. Photograph of the gangrene on May 15, one day before separation of the slough and eighteen days from the onset.

Case II

A soldier aged 24 was transferred on June 2, 1942, from another hospital for stabilization after diabetic coma. He had noticed thirst and polyuria for six months, but had felt quite well until a carbuncle appeared on the back of his neck on May 20. At this time he was on manœuvres, and diabetes was not diagnosed until his admission to hospital on May 30 in diabetic coma, which lasted for two days. The blood sugar was then 560 mg. per 100 c.cm., and dehydration, ketosis, and peripheral circulatory failure seem to have been pronounced. The coma had been treated in the usual way and the diabetes was well controlled.

Each knee showed an area of dry superficial gangrene on the anterior surface. Overlying the surface of the flexed knee each area was 4 in. long by 3 in. broad on the right and 2½ in. on the left, the outer border on the right being just lateral and on the left just internal to the midline of the knee. The shape and symmetry of these lesions, almost mirror images as they were, suggested that they were due to pressure of the bed-clothes with the knees flexed and the thighs in a position of slight abduction and external rotation. There was no effusion into the joints or adenitis. Separation was complete in four weeks, and in six weeks the areas were healed.

The patient was well on discharge after four months, but in the interval many embolic abscesses, including a deep staphylococcal abscess in the adductor muscles of the left upper thigh, required surgery.

Case III

A packing-case maker, aged 29, who had been diabetic for three years, was admitted on July 15, 1942. Mentally a little dull, he was a most unstable diabetic, and the bruise on his left thumb, well shown in the photograph (Fig. 2), attested to those insulin reactions, accompanied by diplopia, through which his erring hammer would miss the nail, held in his hand, and strike his thumb.

For the first of this three years of diabetes he had had great difficulty with his injections and had been warned not to inject too deeply. When asked to demonstrate his usual technique he produced to our horror, by the injection of 20 units of soluble insulin 40 units per c.cm. in strength, an intradermal wheal corresponding in size to the lesions shown in the photograph. These consisted

of small round patches of dry superficial gangrene in all stages from discoloration to separation of the slough and fibrosis of the underlying granulations.

Attempts to reproduce the lesions both in this man and in normal controls were unsuccessful. During this time his diabetes was well controlled. No more gangrene has appeared since his use of the correct method of injection, but his diabetes is very unstable,

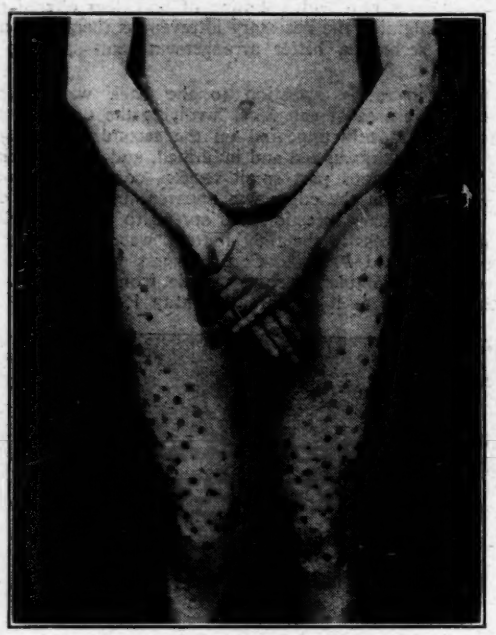


Fig. 2.—Case III. "Dermatitis artefacta gangrenosa diabetica" of areas used for insulin injections; July 9, 1942.

hypoglycaemic symptoms being frequent despite noon blood sugars of the order of 400 mg. per 100 c.cm. on some of his visits to the clinic.

Discussion

From the first two of these cases it would appear that even in adolescents a comparatively slight degree of pressure during severe diabetic coma will produce a local ischaemia which proceeds to gangrene. Of the various pathological factors present—ketosis, hyperglycaemia, dehydration, and severe peripheral circulatory failure—the last may well be the most important. That arterial disease plays no part is well shown by the intense local inflammatory reaction and the rapid localization and separation of the slough. Indeed, the contrast between the tedious dry gangrene of the extremities in the elderly diabetic and the condition just described is striking.

This condition receives small mention in the literature. In Brier's (1934) description of a case of gangrene of the face and ear in an untreated diabetic farmer aged 24, he notes that superficial gangrene of the heels also appeared. At so young an age as 18 days a female infant, whose case is described by Lawrence and McCance (1931), developed typical gangrenous lesions of pressure-points associated with a severe but temporary diabetes. Similar lesions of pressure-points in a woman aged 40 who was in typical diabetic coma have been named "dermatitis gangrenosa" by Riven (1935).

In the third case intermittent trauma by the intradermal injection of insulin over a period of two years in a badly controlled diabetic produced small areas of dry gangrene at the site of some injections. Lawrence (1944) gives a warning of the effect of intradermal injections, but such a case must indeed be rare, and is worthy of record as a curiosity.

I wish to express my gratitude to Dr. A. C. D. Firth for his kindness and help in this study of his patients, to Sir Francis Fraser for permission to record their description, and to Dr. R. D. Lawrence for helpful criticism.

References

Bowers, C. H. (1924). *J. Amer. med. Ass.*, **82**, 1325.
Brier, A. J. (1934). Ibid., **103**, 1704.
Joslin, E. P. (1940). *Treatment of Diabetes Mellitus*, Philadelphia.
Kiefer, E. D., Brigham, F. G., and Wheeler, R. R. (1926). *Boston med. surg. J.*, **194**, 191.
Lawrence, R. D. (1944). *The Diabetic Life*, London.
—— and McCance, R. A. (1931). *Arch. Dis. Childh.*, **6**, 343.
Riven, S. S. (1935). *Amer. J. med. Sci.*, **189**, 550.

Medical Memoranda

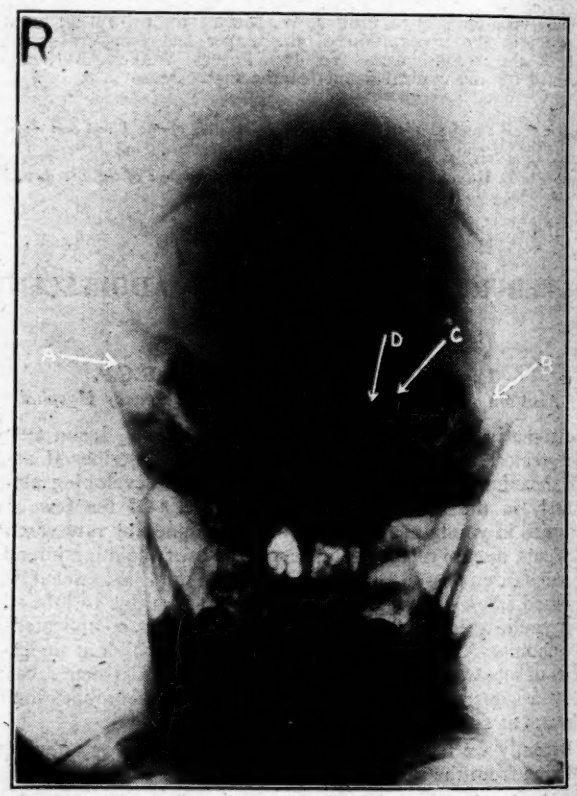
A Case of Petrositis

The following case is instructive, for it shows that the serious condition of suppurative petrositis, complicated by extradural abscess, may be treated by a conservative operation preserving the hearing.

Case History

On March 1, 1944, a girl aged 9 was admitted to hospital with acute left-sided otitis media and mastoiditis. She had a past history of several attacks of bilateral otitis media successfully treated with sulphonamides. Myringotomy was performed on the same day and profuse discharge followed. Sulphonamide therapy was begun in full doses. On March 5 she complained of severe persistent left frontal and post-orbital headache, and on the following day a left external rectus palsy developed. Lumbar puncture revealed a C.S.F. with a lymphocyte count of 9 per c.mm., but otherwise normal. A diagnosis of mastoiditis and acute suppurative petrositis was made. A left cortical mastoidectomy was done on March 7, and a gallery of infected cells in the sino-petrosal angle was opened.

Although the general condition improved for a few days after the operation, the pulse rate remained high and the temperature did not settle. On March 15 she complained of: (1) severe left frontal headache, mainly in the distribution of the ophthalmic branch of the 5th nerve; (2) weakness when chewing on the left side (mandibular branch of 5th nerve); (3) deafness and giddiness. The deafness apparent a few days before now increased (8th nerve). The squint persisted (6th nerve), and there was some slight evidence of facial palsy (7th nerve). It was obvious that a lesion was present involving the courses of the 5th and 6th nerves. A small extradural abscess at the apex of the petrous temporal was diagnosed. Involvement of the 7th and 8th nerves was accounted for by diagnosis of acute petrositis and serous labyrinthitis.



Radiograph of Case.—A: Normal mastoid cells. B: Mastoid cells removed up to bony labyrinth. C: Track of absorbed bone. D: Site of abscess.

Operation (Mr. Magauran).—To preserve the hearing it was decided to approach the abscess along the superior surface of the petrous bone. This was done after removing the bone down to the bony labyrinth (lateral and posterior canals) and elevating the dura from this aspect of the bone. An extradural abscess containing a few cubic centimetres of pus was found after separating the dura for about 1½ in. Two thin rubber strips were used to drain the abscess, and 30% sulphacetamide injected into the cavity. The strips were removed three days later. The patient is now (April 15) well recovered. The wound is closing satisfactorily and hearing is nearly normal (whispering voice, 10 ft.).

Morbid Anatomy.—It was demonstrated at operation that the superior galleries of the petrosal cells were infected. Radiograph

taken after operation (see Fig.) showed the amount of bone removed and the track of absorption of cells near the superior aspects of the bone leading to the site of the abscess.

My thanks are due to Dr. W. C. D. Maile, medical superintendent, for allowing me to publish this case; to Mr. W. H. B. Magauran, F.R.C.S., for his invaluable assistance in preparing this paper; and to the staff for their help and encouragement.

D. L. BRIDGEWATER, M.B., B.Ch.,
Resident Medical Officer.
Woking Victoria Hospital.

Use of Dried Rabbit Plasma for the Staphylococcus Coagulase Test

In laboratories where occasional staphylococcus coagulase tests are done, supplies of fresh human or rabbit plasma known to be suitable for the test are not usually available. Fairbrother (1940) found that different batches of human plasma showed some variation in coagulability, and advised the use of positive and negative controls. Christie and Keogh (1940) observed that false positives occurred if plasma more than forty-eight hours old was used. We have found human plasma from transfusion blood unreliable. Rabbit plasma was therefore dried from the frozen state and tested for its suitability after prolonged storage at room temperature. This dried product has also been used in routine work for the past twelve months and found to be reliable and convenient for both the slide test and the orthodox tube method.

EXPERIMENTAL WORK

Selection of Strains.—From our collection of dried cultures of *Staphylococcus aureus* six strains—two coagulase-negative, two weakly coagulase-positive, and two strongly positive—were selected and used for testing plasma. It was of interest to observe that of two subcultures of a particular strain the culture which had been passaged through mice before drying had a coagulation time of ten minutes, whereas the relatively avirulent strain maintained solely on artificial media for some time before drying had a coagulation time of five hours.

Collection and Drying of Rabbit Plasma.—Blood was obtained from rabbits by cardiac puncture; 10 ml. of blood was withdrawn into a 20-ml. syringe containing 10 ml. of 4% sodium citrate in distilled water. The mixture was centrifuged and the supernatant liquid withdrawn; 0.5 ml. of this diluted plasma in small glass tubes of approximately 0.7 × 7 cm. was dried from the frozen state (any of the standard methods using a high-vacuum pump are satisfactory). Dry nitrogen was run into the evacuated tubes containing the dried plasma, and the tubes were sealed in a blow-pipe flame.

Testing of Fresh Plasma.—To 0.5 ml. of diluted plasma were added four drops, about 0.2 ml., of a suspension of staphylococci. The mixture was then incubated at 37° C. for six hours and left at room temperature overnight; readings were taken at intervals. A comparison was made, with each of the selected strains, of (*a*) a saline suspension from an overnight growth on an agar slope, (*b*) a similar suspension in tryptic digest broth, and (*c*) an overnight growth in digest broth.

TABLE I.—*Clotting Times with Fresh Rabbit Plasma*

Dilution of Fresh Plasma	Organisms suspended in	Clotting Time with Strains					
		CN 49	CN 659	CN 70	CN 69	CN 384	CN 64
1/2	Saline from culture on agar slope	30 mins.	1 hr.	5 hrs.	5 hrs.	Neg.	Neg.
	Broth from culture on agar slope	10 ,,	30 mins.	4 ,,	5 ,,	,,	,,
	Broth culture ..	20 ,,	10 ,,	3 ,,	4 ,,	,,	,,
1/6	Saline from culture on agar slope	30 mins.	1 hr.	Neg.	Neg.	Neg.	Neg.
	Broth from culture on agar slope	10 ,,	1 ,,	3 hrs.	24 hrs.	,,	,,
	Broth culture ..	10 ,,	10 mins.	5 ,,	24 ,,	,,	,,
1/18	Saline from culture on agar slope	10 mins.	2 hrs.	Neg.	Neg.	Neg.	Neg.
	Broth from culture on agar slope	10 ,,	1 hr.	5 hrs.	5 hrs.	,,	,,
	Broth culture ..	10 ,,	10 mins.	5 ,,	24 ,,	,,	,,

A suspension in broth or a broth culture is satisfactory, whereas a suspension in saline is ineffective with higher dilutions of plasma, as shown by Fisk (1940).

It was thought that there might be differences in the coagulability of different rabbit plasmas, but there was no significant difference in the clotting time when the plasma of 18 normal rabbits was tested against the six strains of staphylococcus.

Testing of Dried Plasma.—For use in the test, dried plasma was dissolved in a volume of distilled water equal to the volume of the plasma before drying. Table II shows the clotting time of three dried rabbit plasmas tested against the six selected strains. The dried plasma was dissolved in 0.5 ml. of distilled water and tested against a broth suspension of an overnight growth of staphylococcus on an agar slope. It can be seen that the dried plasma is just as effective as fresh undried plasma. So far the dried product has shown no deterioration over a period of twelve months, and it is possible that it will be stable for a much longer period.

TABLE II.—*Clotting Times with Dried Rabbit Plasma*

Dilution of Reconstituted Dried Plasma	Rabbit No.	Clotting Time with Strains					
		CN 49	CN 659	CN 70	CN 69	CN 384	CN 64
1/2	1	30 mins.	1 hr.	2 hrs.	3 hrs.	Neg.	Neg.
	2	30 ,,	1 ,,	3 ,,	4 ,,	,,	,,
	3	20 ,,	30 mins.	2 ,,	3 ,,	,,	,,
1/6	1	20 mins.	1 hr.	3 hrs.	4 hrs.	Neg.	Neg.
	2	30 ,,	1 ,,	4 ,,	5 ,,	,,	,,
	3	30 ,,	30 mins.	3 ,,	4 ,,	,,	,,
1/18	1	20 mins.	30 mins.	5 hrs.	5 hrs.	Neg.	Neg.
	2	1 hr.	1 hr.	4 ,,	4 ,,	,,	,,
	3	30 mins.	2 hrs.	4 ,,	4 ,,	,,	,,

Slide Test for Coagulase-positive Staphylococci.—Since the original observation of Much (1908) that coagulase-positive staphylococci are immediately clumped by plasma, a slide test has been used extensively in some laboratories. Berger (1943) found that natural agglutinins are present in some samples of normal rabbit serum. In order to "obviate this source of false positive results" he used a fibrinogen solution, which when stored in the ice chest could be used for "at least four weeks." The dried plasma was found to be as suitable as the fresh plasma when used in the slide test. However, a number of strains of staphylococcus which were coagulase-positive with the tube test failed to give a slide test with either fresh or dried rabbit plasma.

SUMMARY

Rabbit plasma may be conveniently dried for use in the staphylococcus coagulase test and is stable for at least twelve months.

J. C. COLBECK, M.B., B.S.,
County Pathological Laboratory, Warwick.
H. PROOM, B.Sc.,
Wellcome Physiological Research Laboratories, Beckenham.

REFERENCES

Berger, F. M. (1943). *J. Path. Bact.*, **55**, 435.
Christie, R., and Keogh, E. V. (1940). Ibid., **51**, 189.
Fairbrother, R. W. (1940). Ibid., **50**, 83.
Fisk, A. (1940). *Brit. J. exp. Path.*, **21**, 311.
Much, H. (1908). *Biochem. Z.*, **14**, 143.

Abortive Lobar Pneumonia after a Course of Sulphapyridine

The interest of this case lies in the occurrence of lobar pneumonia, in an abortive form, in an adult who had, three to six days before, had a full course of sulphapyridine therapy.

CASE HISTORY

A healthy man aged 36 fell ill with acute otitis media. He was put on full doses of sulphapyridine, and the otitis subsided uneventfully after four days. The sulphapyridine was stopped.

I had seen the patient on the morning of the sixth day. The same night I was called to him because of very severe pain in the right side of the chest. On examination he was obviously in great pain; there were no physical signs in the lungs, no temperature, no history of rigors or vomiting, and very little cough. The respirations were quickened, but this was thought to be due to the fact that deep breathing increased the intensity of the pain, which in addition was worse on movement. The possibility of lobar pneumonia was considered, but it was thought that the absence of temperature, the lack of physical signs, and the history rendered this improbable.

Expectant treatment was given—poultices and analgesics—and the comforting diagnosis of pleurodynia made. Next day the patient was much better. His appetite was normal, the pain was much less, there was little or no respiratory embarrassment or physical signs, and he felt very well. The condition had subsided to such an extent as to make a visit on the following day unnecessary. The patient seemed a perfectly fit man with a slight pain in the chest. On the next day but one he was again visited and found in the bathroom washing himself preparatory to going downstairs. To use his own expression, he was "champion." The chest was examined as a matter of routine and, to my astonishment, the right lower lobe presented the typical clinical features of consolidation. The signs were those of lobar pneumonia on the second to fourth day of illness. It was only then that one was able to inform the patient of the diagnosis and, after belief had succeeded scepticism, his return to bed was effected. Convalescence was uneventful.

COMMENT

This case is differentiated from one of abortive pneumonia (maladie de Woillez) by the presence of well-marked physical signs which are said not to occur in the latter condition. It is thought that the case may be of interest as adding weight to the suggestion that sulphapyridine or similar drugs should be given prophylactically in conditions in which pneumonia is likely to be a complication, and also because it suggests that patients who have been on a full course of sulphonamide therapy should not be released from medical observation until a full routine clinical examination has been made.

BASIL LEE, M.R.C.S., L.R.C.P.

Reviews

THE MEDICAL ANNUAL

Medical Annual, 1944. Edited by Sir Henry Tidy, M.D., F.R.C.P., and A. Rendle Short, M.D., F.R.C.S. Sixty-second year. (Pp. 404; illustrated. 25s., postage 7d.) Bristol: John Wright and Sons, Ltd.; London: Simpkin Marshall (1941) Ltd.

To look back on the medical events of the past year is a wholesome form of postgraduate education, and for years many doctors have found one of the best ways of doing this is to subscribe to the *Medical Annual*, the 1944 edition of which has now been published. It still appears between the evergreen covers, and as usual presents its information in alphabetical order, the first article being "Abdomen, Injuries of," and the last "Yellow Fever." The editors present their familiar survey as an introduction, and the advertisers present their wares in as attractive a manner as possible.

To review such a work adequately would be to list the entries from A to Y and to say after each one, "This is very good." Although the editors observe of the sulphonamides that "possibly in one or two directions the august nose has been put out of joint by its young rival, penicillin," there is no separate entry for penicillin, which seems to us to be a notable omission. What might be called a new department of medicine, known in America as geriatrics, is dealt with under the heading of "Ageing." By reason of the changing distribution of age groups this subject will attract growing attention, and in the meanwhile we might agree with the author's conclusion that "the practical upshot of the problem, as we see it at present, is that certain advantages may accrue from the employment of experienced and well-preserved elders." Though there is apparent anxiety to preserve the elderly, there does not seem to be the same concern in preserving the young, as on a quick glance through we can find no reference to the important problem of infant mortality. The usefulness of the volume as a whole would be much improved by a yearly article under the heading of "Vital Statistics." One disease of special interest—namely, infective hepatitis—is dealt with in the most admirably illustrated article by Col. William S. Middleton, consultant physician to the United States Army in the European Theatre of Operations: so far as we know this is the first time that any contributor from outside the British profession has joined the distinguished team which makes the *Medical Annual* what it is.

ALCOHOL ADDICTION

Alcohol Addiction and Chronic Alcoholism. Edited on behalf of the Scientific Committee of the Research Council on Problems of Alcohol by E. M. Jellinek. Effects of Alcohol on the Individual: A Critical Exposition of Present Knowledge. Volume I. (Pp. 336. 26s. 6d. or $4.00.) New Haven: Yale University Press; London: Oxford University Press.

Anyone who has spent some months in the United States realizes that alcohol presents a problem there which is much more acute than in Britain. Many people here are content with beer or cider at meals, and drink only an occasional cocktail. In America the hotter weather and the increased tempo of life, which often begins with breakfast at 7 a.m., seem to demand more release about six in the evening than is given by mere cessation of work. So that more alcohol is drunk. When there are parties (and they are numerous) women drink a good deal too. There often appears to be a purpose about it, even a sense of obligation to drink much. One story of a farmer in Vermont on his way to town is told: a friend meeting him inquired, "Well, Tom, are you going to get drunk to-night?" "Ay," he replied, "and don't I dread it!" Hence alcohol has become in the U.S.A. a "medico-social issue," and a Research Council on Problems of Alcohol was organized in 1937. It includes names well known in this country, such as W. B. Cannon, A. J. Carlson, H. S. Gasser, and A. C. Ivy. The council decided to begin by preparing an analysis of existing literature on the problems of alcohol, and obtained funds for a study of the "Effects of Alcohol on the Individual" from the Carnegie Corporation of New York. The first contribution to this study has now appeared as Volume I on *Alcohol Addiction and Chronic Alcoholism.*

This book is edited by E. M. Jellinek, and has as its main contributors K. M. Bowman, who is professor of psychiatry at the University of California, Norman Jolliffe, who studies nutrition, and the editor himself. The book has two parts, the first dealing with addiction and alcoholic mental disorders, and a second concerned with chronic alcoholism and alcoholic encephalopathies in relation to nutrition. The worst feature of the book is that it is written in an unattractive style, which does not vary greatly in different parts. Sentences such as "These factors . . . are prominently discussed in propagandistically oriented writings" (p. 47), or "The experimental study of factors determining inherent tolerance offers a first approximation to the systematic exploration of the etiology of addiction" (p. 46) are fair examples of a prose which has the distracting quality of a toothache, so that it is difficult to take in what one has read. A close runner-up as the worst feature of the book is the psychiatric or psychological jargon with which it abounds. The reader must contend with "acute alcoholic hallucinosis," "amnestic polyneuritic psychosis," "exogenic syndrome," and the like—technical terms which make the reading possible only to specialists. The trouble is that it is impossible at present to make any connected story out of the available facts. In the section on nutrition one looks in vain for those beautiful experiments done by Sebrell—to them A. P. Herbert devoted a page of *Punch*—in which it was observed that rats eating a diet deficient in vitamin B_1 were symptom-free for a longer time when whisky was included in their food. Despite all attempts to explain it away, the result stands unshaken.

As a collection and examination of the literature this book undoubtedly has much value for the specialist, but it is evident that not much of general interest is yet known of this subject.

MEDICAL PROBLEMS OF FLYING

Principles and Practice of Aviation Medicine. By Harry G. Armstrong, M.D., F.A.C.P., Second edition. (Pp. 514; illustrated. 36s.) London: Baillière, Tindall and Cox. 1943.

Physiology in Aviation. By Chalmers L. Gemmill, B.S., M.D., (Pp. 129; illustrated. $2.00 prepaid or 11s.) Springfield and Baltimore: Charles C. Thomas; London: Baillière, Tindall and Cox.

The first edition of Col. Armstrong's valuable textbook appeared most opportunely in time for the outbreak of hostilities in 1939, thirteen years after Bauer's smaller textbook *Aviation Medicine.* Its circulation was therefore enormous, since the need for it was great, and it soon formed the basis of learning for many Air Force medical officers. It was admirable for the purpose, and the careful expositions of the underlying human physiology were most valuable to the doctor who had left his civilian practice to follow a surprisingly new form of medicine. After its appearance, aviation medicine in the Services made enormous strides, and sections of the book became open to serious criticism. The second edition has appeared to meet an increasing demand, but, as the author freely admits, it has not been possible to alter the text so as to bring it up to date because he cannot use any of the material which he has at his finger-tips, for it is still considered secret or confidential. He has been able to recast some sections—for instance, that dealing with neuroses—so as to bring them into general line with present thought, and has made additions, as in the section on equilibrium. Nevertheless the bulk of the book remains unchanged, and many chapters, particularly those dealing with high-altitude physiology, oxygen equipment, the physical and psychological standards of air-crew selection, air-sickness, and chronic altitude sickness, will need revision as soon as security and the author's important Service duties permit. This will no doubt lead to an edition which will re-establish the book as the standard text in aviation medicine. In the meantime the second edition is a very valuable stop-gap, which will implement the serving doctor's practical experience.

The excellent short text of *Physiology in Aviation* is based on a course of lectures given by Cmdr. Gemmill at the School of Aviation Medicine in Pensacola. If the Air Force medical officer is to understand the medical problems of modern flying he must have a sound basis of the physiology of respiration and circulation. Cmdr. Gemmill explains in seven short chapters the physical properties of gases and the normal physiology of gaseous exchange before he deals with the effects of low pressure and of anoxia. He then gives a simple account of the physiology of the circulation before he explains the effects of acceleration. Then he deals very briefly with the physiology

of temperature control and of muscular exercise. He confines himself to those bodily functions which are affected specifically by power flight, so that he has omitted all reference to the ear and eye and to the physical standards of selection, attention to which makes up such a large part of the practice of aviation medicine. The text is simple and lucid, it keeps to essentials, it is admirably illustrated by clear graphs and diagrams, and it succeeds in its object of presenting the basis of a difficult subject in an interesting and constructive manner. The book is not intended for reference; on the contrary, it is so concise and short that some sections might well benefit by expansion. It is an excellent introduction to aviation medicine.

VETERINARY DIAGNOSIS

Diagnostic Methods in Veterinary Medicine. By G. F. Boddie, B.Sc., M.R.C.V.S. (Pp. 328; illustrated. 15s.) Edinburgh: Oliver and Boyd, Ltd. 1944.

Prof. Boddie's chapter headings and systemic classification are familiar to users of Hutchison and Rainy's *Clinical Methods*. A first glance gave high hopes that at long last we had the much-needed veterinary companion to the classic of the medical schools. But the prolix and muddled text brought disappointment and a conviction that to say what the book is not would be easier than saying what it is. It is neither a treatise nor a handbook on veterinary diagnosis. It is not a handy reference; its index is weak. Despite its title it is not limited to the medical as distinct from the surgical approach. It seems to bear some resemblance to a compilation on the methods of clinical investigation of sick farm animals and dogs as taught by Prof. Boddie to the students of the Royal (Dick) Veterinary College, Edinburgh.

For a medical reader it contains much of interest and instruction, particularly on the methods of examining animal patients; but we find no attempt to interpret animal behaviour, particularly in regard to fear and pain—an interpretation which only the experienced veterinary surgeon is qualified to give. Such subjects as cellulitis, contagious abortion, haemolytic streptococcal infection, mastitis, and sterility do not appear to have impressed the author. Surely in the examination of animal urines the deposit is of significance; and why inject tuberculin into the left wattle of a fowl when, with the bird properly held, the right wattle is obviously the correct site? We were under the impression that those ghosts of immature observation "Stuttgart disease" and "Hodgkin's disease of dogs" were laid years ago. The chapter on clinical haematology is out of proportion; it might be suitable for a monograph on the comparative study of blood. The chapter on the investigation of helminths is the most readable, helpful, and accurate part of the book.

Notes on Books

Medical Radiographic Technic is published in this country by Baillière, Tindall and Cox at 35s. It has been compiled by the technical service department of a large American firm of *x*-ray manufacturers and has the good qualities and defects consequent on its parentage. The first half of the book is taken up with an account of *x*-ray physics, the various types of apparatus produced by the firm, and dark-room technique. The section on apparatus is clear and informative and will be of special value to users of the particular type of apparatus described. The second half is concerned with clinical radiography of the patient, and although giving a workmanlike account of that subject, it here and there betrays signs that the authors are more *au fait* with the constructional than the clinical side of *x*-ray work. Mention should be made of the illustrations, which are of the highest quality throughout. The schematic anatomical pictures are beautifully drawn, and should be of great value to the radiographic students for whom they are intended. The same applies to the plates that illustrate the positioning of the patient. The volume will be a useful addition to the library of those taking up radiography as a career.

Dr. Arthur Compton, director and bacteriologist-in-chief, Laboratory Service, Alexandria, has published a pamphlet headed *Aerobic, Non-sporing, Excretal Bacteria*, with a synoptical table of biochemical characters arranged in terms of manipulative procedure (Alexandria: Société de Publications Egyptiennes). The table had its origin in the need for a differential summary, in which the faecal bacteria are listed not in alphabetical order, as is usual in special textbooks, but in accordance with their fermentation reactions when working with a minimum of reliable protein, carbohydrate, polyatomic alcohol, and glucoside substrates of the less costly types. An interim account of this work was given by the author at a meeting of the Société de Médecine et d'Hygiène Tropicales d'Égypte on March 7, 1941. An enlarged edition of the determinative table, suitable for framing or mounting on cloth, etc. (with marginal notes and procedure diagram), can be had from the secretary of the society, 2, Avenue Fouad Ier, Alexandria, at P.T. 30 for Egypt, and 8s. or $2.00 (or the equivalent) for abroad.

Preparations and Appliances

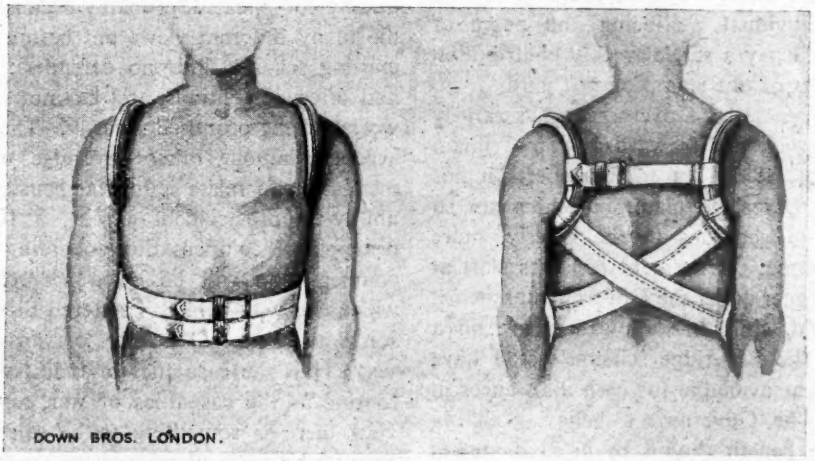
SIMPLE SPLINT FOR FRACTURE OF THE CLAVICLE

Mr. B. Whitchurch Howell, F.R.C.S., writes:

I have been using this splint for the past ten years with excellent results, and think, therefore, that your readers might like a simple description with photographs showing its application. For the latter I am indebted to Messrs. Down Bros., of Cavendish Square, W.1, from whom the splint may be obtained.

The *main advantages* of the splint are: (1) maintenance of reduction of the fracture; (2) simplicity of application; (3) absence of distress to the patient; (4) freedom of the arms—even a bicycle or horse can be ridden after its application; (5) freedom of breathing; (6) absence of pressure on the chest—a fact particularly appreciated by women.

The rings are applied over the arms and moulded over the shoulders and under the axillae. The narrow straps are brought together across the shoulder-blades and buckled, and the wider straps are passed across the back in the form of a St. Andrew's cross, brought to the front and buckled across the abdomen. The leather should be treated with saddle soap. Gamgee may be used in addition if necessary.



BRITISH MEDICAL JOURNAL

LONDON

SATURDAY OCTOBER 7 1944

SOCIAL INSURANCE

The Minister of Reconstruction presented to Parliament last week two documents which will rank of first importance in the social history of Great Britain.[1] The first set forth the Government plans for a comprehensive scheme of social insurance—a "mosaic of detail," covering sickness, invalidity, and unemployment benefits, retirement pensions, and family allowances. Family allowances, by the way, are to be met wholly out of taxation, and therefore do not strictly come within social insurance. In the other cases the tripartite system of contributions by the insured, his employer (if he has one), and the Exchequer holds good. The second document outlined proposals for an industrial injury insurance scheme to replace the present system of workmen's compensation. Workmen's compensation, established nearly fifty years ago, was the pioneer scheme of social security in this country. It is now to be lifted clean out of the employer-versus-employee arena, which has often proved litigious, made into a social service, and placed, like the other benefits, under a Ministry of Social Insurance.

As in the proposed National Health Service, so in this wider territory the governing principle is comprehensiveness. There is no variation or shadow of turning from the 100% inclusion. All ages, all economic groups, all occupations—the leader at the Bar and the woman who sweeps his chambers—all are roped into compulsory insurance, thereby far more than doubling the present number of insured persons. Provision extends from the nursery, by way of maternity benefit and children's allowances, to the grave, by way of a death grant. It is designed to guard against "every one of the main attacks which economic ill fortune can launch against individual well-being and peace of mind." All persons will pay a single weekly contribution for all benefits by means of one stamp on one card.

In both these documents the Government has largely drawn upon the proposals put forward by Sir William Beveridge in November, 1942. In some respects it has gone further than the Beveridge plan; in others not so far. It has been more generous to the elderly, more parsimonious to the young: Retirement pensions start at some shillings a week higher under the Government scheme, and, on the other hand, children's allowances are on a more meagre scale. The Beveridge scheme would have made £110 million a year available for cash allowances in respect of children. The Government, believing that a substantial part of the benefit should be in kind, makes only £69 million available in cash, but states that school meals and milk services will be so extended that when they have reached their full development the cost will not be much below the total for cash allowances. Before these services reach such full development, however, much time may elapse; there are large parts of the country where the services do not exist, and in any event they are only for school-children, or, rather, for children while attending school. Unless this provision is quickened the nutrition of children, especially in homes where there is sickness or misfortune, may not be improved to anything like the extent that advocates of family allowances had hoped. The dilemma of the social planner is, of course, to bestow benefits without encouraging the idler, the spendthrift, and the malingerer, and without sapping the initiative of the country's manhood: the free gift of *panem et circenses* to the Roman populace was a policy characteristic of the decline and not of the rise of the Roman Empire. It is held by the Government to be psychologically unwise to make sickness benefit of unlimited duration, and no one can complain that a benefit covering three years of continuous sickness is ungenerous. But the chronic invalid at the end of three years, returning to the lower scale of insurance benefit, is likely to be in the same or greater need of assistance. Indeed, in such cases it is not a question of a few shillings less or more, but of individual care, perhaps of institutional care, of which nothing is said in this White Paper. The Beveridge plan, though it dismissed the approved society system as such from the administration of compulsory cash benefits for sickness, allowed a possible field for friendly societies as agents. The Government bangs the door upon approved societies altogether. The Ministry of Social Insurance will itself administer sick pay. The approved societies are powerful bodies, and already the sharpening of battle axes is to be heard. The medical profession has had to criticize approved societies, but it seems a pity that their special experience in administration should go to waste. The friendly societies have maintained a sense of fellowship and a human touch which has been a distinctive contribution to social progress.

In the proposals to supersede workmen's compensation more marked departures have been made from the Beveridge scheme. Sir William Beveridge was less inspired in this part of his plan than in others. His proposals were unduly complicated, probably because he tried to reconcile the many different views put before his committee. The existing scheme finds no defender; it has proved costly and often contentious, and has not always brought to the workman the promised security. The Government has not accepted, among other Beveridge proposals, the recommendation to relate industrial pensions for long-term disability to pre-accident earnings. It has abandoned the principle of compensation according to earning capacity; compensation will be given according to the extent to which the workman has suffered disablement by comparison with a normal healthy person of the same age and sex. Thus the casualties of industry will be on the same footing as the casualties of war, and from that point of view there is something to be said for the proposal to entrust the medical assessment to the medical boards of the Ministry of Pensions, with the right of appeal to a special tribunal consisting of two medical practitioners and a chairman. The British Medical Association, in evidence which it submitted in 1939 to the Royal Commission on

[1] Cmd. 6550 and 6551. London: H.M. Stationery Office.

Workmen's Compensation, urged the replacement of the office of medical referee by the setting up of such a board consisting of three practitioners. The Association, of course, could not foresee at that time the removal of workmen's compensation from the law of employer's liability, and it directed its attention to the remedying of certain features which had proved objectionable in experience. One of these was the "lump-sum" payment, which it held responsible for the prolongation of disability in many cases. Under the new Government proposals the "lump-sum" payment, except in some cases of minor disability, will not replace pension. A matter on which the Association laid special stress five years ago was the need for rehabilitation centres. The most baffling problem in connexion with industrial disability is that of "light work," a term which has never been legally defined, while the medical side of the problem itself has never been fully explored. The Association suggested that the situation could be met by the establishment of rehabilitation units, and it devoted more than half its memorandum of evidence to this question. The new White Paper makes very scant reference to that side of the subject. Rehabilitation has been, if not ignored, at least overshadowed by the cash register. It is simply stated that it will be provided as part of the general medical and post-hospital services provided by Health Departments and by the Ministry of Labour and National Service, that there should be close contact between these Departments and the new Ministry of Social Insurance, and that there will be an obligation on the workman to undergo training. But one misses the accent on restoration and the improvement and promotion of health. Allowances and pensions, after all, are the flags of defeat. The ideal to aim at is a state of affairs in which they are never thought about.

It is evident that both these White Papers are, in a sense, interim documents. A bold map has been drawn, but many topographical details remain to be filled in. Nothing is said about the all-important role which the doctor will take as the guardian of many of these benefits. The integrity of the scheme so far as sickness, invalidity, and industrial injury benefits are concerned will depend upon his certification. No doubt it has been the anticipation of this which has inspired recent official and semi-official warnings about false and misleading certificates. It is acknowledged that the serious difficulty is to secure effective control over the payment of benefit, especially in the case of sickness benefit for persons working on their own account. Several problems in this field call for further consideration. The scheme may be modified by Parliamentary debate and public discussion, but from the "firm proposals," as they are called, the Government is not likely to be deflected—namely, the principle of comprehensiveness and of unification in a single administrative framework. After the usual acclamation which greets a White Paper dissentient voices are being heard. Some are disturbed at the cost of the proposals, which will place new burdens on employers and taxpayers. If the entire scheme were in force next year it would cost £673 million, including £148 million for the enlarged National Health Service, which is some £250 million more than the present expenditure, and of that extra amount £78 million would come out of rates and taxes. Others—or perhaps the same people—fear that the British qualities of independence and self-help will deteriorate. They say with Hecate to the witches of *Macbeth*: "Security is mortal's chiefest enemy." But the same thing was said when National Health Insurance was born, and no doubt when the Poor Law, the oldest of our social services, and now in its final stages of liquidation, came into existence. Such critics, who are probably mostly of his party, might be reminded of Disraeli's dictum that individual security is the necessary foundation of national well-being. Those who can sense the coming time feel that these social security plans are as necessary in peace as victory in war, and that without them the fruits of victory will be soured. So long as security is looked upon as a right which the citizen has to deserve and earn, and so long as he makes an insurance payment for it, then such plans, fulfilled, may act as a stimulus and not as a deterrent to the effort this country will have to put forth in the years to come.

TREATMENT OF CEREBROSPINAL FEVER

A report now published by the Department of Health for Scotland[1] entitled "Sulphonamides in the Treatment of Meningococcal Meningitis" reveals that a systematic study of this disease has been in progress in Scotland for some years past. All cases admitted during the years 1936 to 1941 inclusive to the infectious fever hospitals of Edinburgh, Glasgow, Dundee, and Lanark County have been made the subject of a detailed return, and particulars are thus available of 2,223 cases, representing about 40% of total cases notified in Scotland during this six-year period. The actual form used is not reproduced in this report, but the items of information required are mentioned, and they are comprehensive enough to enable the effect of different forms of treatment to be analysed and assessed from several points of view. This report is in a condensed form and intended only as a preliminary survey; greater detail is promised in a later publication. It begins by reviewing the history of cerebrospinal fever in Scotland during the past forty years. In frequency it has shown four peak years—1907 (2,115 cases); 1915 (409); 1931 (409); and 1940 (2,580). Each has been followed by a slow decline, the normal inter-epidemic level being reached only after three years. There has also been a rise in the inter-epidemic level from an annual average of 70 cases in 1911–14 to over 200 in 1929–39. Brief particulars are given of seasonal and age distribution: a notable difference between these and the English figures quoted by Beeson and Westerman[2] is that 66% of the patients in Scotland were under 15 years old, whereas the corresponding English figure is only 45.5%.

The number of cases in the 6 years covered by the report were successively 99, 120, 110, 100, 1,005, and 763; thus the great majority were those occurring in the first winter of the war and in the succeeding epidemic season. The over-all fatality rate was 16.7%, in contrast to a rate

[1] Report to the Scientific Advisory Committee, Department of Health for Scotland. Edinburgh: H.M. Stationery Office, 1944. (4d.)
[2] *British Medical Journal*, 1943, 1, 497.

of over 50% in the pre-sulphonamide era. The mortality at different ages shows the same general distribution both in the past and in the period under study, with maxima in infancy and in the highest age groups. The fatality rate among cases receiving different forms of treatment affords the main interest of the report, and may be stated briefly as follows, omitting deductions given in the tables for patients dying less than 24 hours after admission. Among 199 cases treated with "serum or antitoxin" alone the fatality rate was 51.7%. There is nothing surprising in this, but a rate of 31.2% among 250 cases treated with both serum and antitoxin and sulphonamides is unexpected. Reasons are given for concluding that these cases were not exceptionally severe, and inadequate dosage of the drug is not held accountable; the suggestion is made that the effect on the meninges of intrathecal serum injection may be responsible. Among cases treated with sulphonamides alone there are four categories, the numbers and fatality rates being as follows: sulphapyridine 1,468 (17.17%), sulphanilamide 128 (9.3%), sulphathiazole 75 (14.6%), and miscellaneous sulphonamides 91 (20.9%). It is unfortunate that these numbers are so unequal, and in particular that the cases treated with sulphanilamide were not more numerous, since, contrary to commonly accepted belief, this drug is shown to have been the most effective. It is said to have been used chiefly at one centre, which suggests that other non-specific factors in treatment may have influenced the results, but throughout the period of the study, which excludes any likelihood that a mild series of cases was treated in this way. It is clearly desirable that further comparative studies should be made on these lines, in which sulphanilamide is used in the same proportion of cases as are other now more popular drugs. These observations have at least reopened this question, and suggest the inadvisability of assessing the relative merits of closely similar drugs on any but an adequate statistical basis. In very many instances clinical impressions are in fact responsible for the choice of particular sulphonamides for various specific purposes, no adequate comparisons on which a firm judgment can be based having ever been made.

The sole demonstrated drawback of sulphanilamide treatment in cerebrospinal fever is a greater frequency of pneumonia as a complication; if the lung infection was pneumococcal (a point on which information is not available) this is to be expected. The fatality rate in sulphapyridine-treated cases appears unduly high, and since dosage was in general adequate it is concluded that the disease in Scotland has been of a more virulent nature than in the South of England, where treatment with this drug has given better results. An analysis of therapeutic effect in relation to the scale of dosage of sulphapyridine yields some peculiar findings. In infants the fatality rate declines as dosage increases, but in the 2–4 years group the lower doses gave the best results, and over 15 years a medium dosage. It is therefore hardly surprising that the authors of the report are disinclined to be dogmatic about optimum dosage. Presumably this study will be continued, and both in Scotland and elsewhere it is to be hoped that available clinical material may be used in a deliberate endeavour to define optimum lines of treatment.

VITAMIN B_1 AND THE HEART

In a recent letter to the *Journal*[1] Dr. J. Drummond has affirmed the value of vitamin B_1 in high dosage as a "cardiac tonic" in heart failure and auricular fibrillation. On theoretical grounds benefit might well be expected, as we are reminded by a recent review.[2] Vitamin B_1, or thiamin, is essential for the efficient combustion of the carbohydrate which provides energy for the metabolism of tissues, and the effects of B_1 deficiency are most likely to appear in organs continuously at work—namely, the brain, nervous system, heart, and kidneys.[3] In the cardiovascular system the main features are right ventricular failure with systemic venous congestion and oedema, capillary pulsation, and a low diastolic pressure. Usually there is a striking absence of orthopnoea, but cases may occur in which left-sided failure is present with dyspnoea and orthopnoea.[4] The cardiovascular symptoms may be associated with polyneuritis or other consequences of vitamin deficiencies. Electrocardiographic changes attributed to vitamin-B_1 deficiency have not always been consistent. The heart in beriberi shows typically, however, an inversion of T waves and a low amplitude in all complexes.[5] In human volunteers with induced thiamin deficiency Williams[6] observed a similar diminution in the amplitude of all waves, particularly the T waves. A comparable condition has been produced in pigs maintained on a thiamin-deficient diet.[7] Clinically some of these animals developed cyanosis, dyspnoea, and bradycardia, these signs being accompanied by electrocardiographic abnormalities. Pathologically there was cardiac dilatation without hypertrophy, and the myocardium showed focal and diffuse necroses.[8]

It is one thing, however, to agree that deficiency of vitamin B_1 may lead to heart failure, as in the classical form of wet beriberi, and quite another to claim that deficiency of vitamin B_1 plays a significant part in cardiac failure as seen in this country. There is no evidence that vitamin-B_1 deficiency is present to any appreciable extent in the normal population of this country, and our wartime diet is more than adequate in this respect. Nevertheless a "conditioned deficiency" of vitamin B_1 might occur in heart failure as a result of a long-restricted diet, deficient assimilation of food, or an increased need. The intake of food may be inadequate, assimilation may be deficient as the result of systemic venous congestion, and the requirements of B_1 are increased by the considerable rise in the metabolic rate which occurs in many persons with congestive heart failure.[9] It is possible, therefore, that a thiamin deficiency might occur as a complication of chronic heart disease. Although satisfactory biochemical methods of assessing thiamin deficiency are now available, there is at present no evidence that such a deficiency is common in heart failure. Finally, it is conceivable that vitamin B_1 might have a pharmacological action in heart failure which was quite independent of its action as a vitamin, in the same way that nicotinic acid (but not nicotinamide) relieves angina, migraine, vertigo, and neuralgia. The proof of the pudding must be in the eating, and it is probable that the majority of cardiologists would not agree with Dr. Drummond in his eulogy of vitamin B_1. The few patients in whom it is effective usually give a history of long-standing alcoholism and gross dietary deficiency.

1 *British Medical Journal*, 1944, **1**, 771.
2 *Nutrit. Rev.*, 1944, **2**, 38
3 *Proc. roy. Soc. Med.*, 1939, **32**, 807.
4 *Ann. intern. Med.*, 1937, **11**, 104.
5 *Electrocardiography in Practice*, by A. Graybiel and P. D. White, Philadelphia, 1941.
6 *Arch. intern. Med.*, 1942, **69**, 721.
7 *Johns. Hopk. Hosp. Bull.*, 1943, **73**, 169.
8 *Amer. J. Pathol.*, 1943, **19**, 341.
9 *J. clin. Invest.*, 1935, **14**, 551.

They are, in fact, technically suffering from secondary beriberi. In 1939 Arthur Hurst[10] reminded us that R. T. Williamson of Manchester described this type of heart failure many years ago and advised testing the tendon reflexes in obscure cases of heart failure. With the exception of beriberi and the alcoholic heart, it is doubtful whether vitamin B_1 has an established place in cardiac therapeutics.

THE MAKING OF BOOKS

Mr. Stanley Unwin's discourse at the Royal Institution on *Publishing in Peace and War*[11] will give pleasure and pain to all who love books. The pleasure will come from the pages which describe book production, because most readers will learn something new to them; the pain will be inflicted by that part of the pamphlet which discusses the state of book production now. The facts are these. Owing to wartime conditions the demand for books, not merely escapist fiction but solid textbooks and classical works, is greater than it has ever been, but the supply is wholly inadequate. We might add—scientific periodicals did not come within the scope of Mr. Unwin's lecture—that many valuable research papers accepted by editors are on a waiting list which grows every day longer, and that at least one director of a medical research department proposes to submit papers in future to American scientific journals. Mr. Unwin speaks with not unnatural bitterness of the attitude of some Ministers and some civil servants. Some Ministers may be illiterate or at least have that contempt for books which is supposed to characterize practical men—no doubt the practical men who, in Huxley's phrase, practise the errors of their forefathers—but most civil servants have at least shown in examination rooms a knowledge of the contents of many books. Perhaps the cynic would say that those who have books of their own and access to good libraries do not lose much sleep over the mental starvation of "the public." A more charitable explanation would be that decisions were taken at a time when the wiser heads among administrators were preoccupied with matters of life and death. Mr. Unwin notes that the allocation of paper for books in 1945 is less than 22,000 tons, a little more than one-fifth of the allocation to H.M. Stationery Office. One grows a little weary of the comic tales of civil service lust for useless forms; but many of them are true, and anybody who has worked in a temporary Government Department could give examples of waste. Very often there is a good defence in theory—or, shall we say?—on paper. Unless a complete documentation survives (the argument runs) it will be impossible to write a history of "the Department," and so, in the next war, mistakes will be repeated.

"In America," Mr. Unwin writes, "the cult of the best-seller has reached such a pitch that a scholarly work stands little chance of acceptance by a commercial publisher unless it has mass appeal. Over here there is still far more long-term non-commercial and prestige publishing than is usually credited, and this is as it should be. But if continuously discouraged it will disappear, and unfortunately in recent times discouragement has come to it from all sides."

It is surely true that in America assistance in the publication of scholarly works can be obtained at least as easily as here, and that the production of serious scholarly periodicals is great. The war has brought the scholars of America and Great Britain into still closer contact than in 1939; it may easily happen that our younger men will look to the other side of the Atlantic for vehicles of publication; from the point of view of making their results known to the learned world nothing will be lost. Still, one might regret this on sentimental grounds.

[10] *Quart. J. Med., Proc. Ass. Phys.*, 1939, **8**, 380.
[11] George Allen and Unwin. (6d.)

A WINDOW ON SCOTTISH SLUMS

For many years to come stories of the wartime evacuation from Glasgow and Edinburgh and their outflow north and south will be told in the burghs, villages, and glens of Scotland. The authentic story of the woman quartered in a cottage on a Highland estate: "Ma weans were told they were to sleep in the King's bedroom. This'll no' do." The children who, after a good dinner, were confronted with a plain tea with warm scones: "We're no' takin' that. You're paid by Government. We're for ham and eggs." And as a sidelight on the habits of some, the mother's remark: "Johnnie, don't use the lady's carpet, use the surround." The publication early in 1943 of *Our Towns: A Close-up* administered a wholesome shock to the social conscience of England, and now a group of Scottish women—the editorial committee of the Scottish Women's Group of Public Welfare—have done the same for their own country.[1] They tell the story of the 180,000 children and their mothers who have been packed away in 500 trains from Scottish towns to rural places during the war. For the most part it is a melancholy tale. Complaint is made that many of the mothers had not the most elementary knowledge of plain and simple feeding. But the bitterest complaint concerned the uncleanliness of the children. In one village which received its entire contingent from a slum school 50% were said to have dirty heads, 30% impetigo, and 20% to be incontinent in their habits. Drastic action was taken in this case by officials and housewives, with a resulting fall of four feet in the local reservoir and a dearth of disinfectants at the chemist's shop. As for enuresis, it is impossible to estimate in what proportion of cases this was temporary and brought on by excitement or nervousness and perhaps by the coldness of country houses, but many of the children seemed never to have been trained to make use of toilet conveniences. On the other hand, the strangeness and loneliness of the new environment to people who have been living 188 to the acre has to be remembered. Many of them had been transported from Glasgow slums to Highland shooting lodges, and the loneliness was too much for them. In one mansion several families were allotted a room each, but in the morning all the twenty-five women and children were found huddled in two rooms and they left within ten days. Amid so much filth and fecklessness two very human touches stand out—the unity of the family and the fear of an institution. No Government circular was ever more tightly grappled to the breast than the official promise not to break up the family. They must literally touch one another at night. A bus laden with weary mothers and children drew up at the entrance to a huge square mansion where the eager kind hostess awaited her guests with every comfort. "No' me! No' me! I'm no' gaun into an institution!" they cried, and wild horses would not have dragged them up the steps. However social reconstruction is to come about, it is evident that the integrity of the family is a factor to be placed in the forefront.

The Committee of Privy Council for Medical Research has appointed Dr. Alan Nigel Drury, F.R.S. (Director of the Lister Institute of Preventive Medicine) and Prof. James Calvert Spence, M.D., F.R.C.P., of Newcastle-upon-Tyne to be members of the Medical Research Council from Oct. 1, 1944.

[1] *Our Scottish Towns: Evacuation and the Social Future.* Edinburgh: W. Hodge and Co., Ltd. (1s. 6d.)

Correspondence

Fracture-dislocation of Talus

SIR,—In his article on fracture-dislocation of the talus (*Journal*, Sept. 16, p. 372) Squad. Ldr. James draws attention to an unusual injury which is of particular importance to the Royal Air Force because it occurs with relative frequency in pilots and air-crews, and because it is potentially one of the most crippling of all lower-limb injuries. In the orthopaedic service of the Royal Air Force we have a larger series of cases than has ever been recorded in this or any other country, and careful analysis has led us to very different conclusions from those of Squad. Ldr. James. He writes: "Closed reduction of the dislocated body if at all feasible is extremely difficult. Reduction therefore, if attempted, should advisedly be open." On the contrary, manipulative reduction, which is occasionally very easy, should always be attempted with determination before embarking on the still more difficult and still more hazardous procedure of operative reduction. One of the major problems in the treatment of this injury is loss of blood supply to the body of the bone, and it is obvious that operative dissection and stripping of soft tissues, which may still further reduce the blood supply, is to be avoided if possible.

Again he writes: "Talectomy.—A comparatively satisfactory result may be obtained if it is performed with care and attention to detail. . . . The depreciation of this operation is in large measure due to inadequate surgical technique." This has not been our experience. No matter how carefully and skilfully the talus has been removed the results have been unsatisfactory. After this operation it is seldom possible for a patient to walk 10 or 15 miles, to run, or to jump from a height. Moreover, the aching pain which develops after exercise steadily increases as the years go by, and even when the early result seems excellent it may be almost impossible to walk after five years. For these reasons nearly every case where there had been a previous talectomy has been treated in the Service by tibio-calcaneal fusion. As Squad Ldr. James points out, this operation "is still on trial"; but it has been done long enough for one pilot to write last week from the Far East, where, two years after tibio-calcaneal fusion, he is engaged on full flying duties: "Sir, it is wonderful; my gait is absolutely natural. May I sincerely thank you."

In his final paragraph Squad. Ldr. James writes: "Arthrodesis.—This should be the treatment of choice. It is needless to prolong treatment by employing reduction first. Arthrodesis should be the only operation." As we have said, arthrodesis of both ankle and subtaloid joints (or tibio-calcaneal fusion after talectomy) gives surprisingly good results, but it is far from true to suggest that this should be the only treatment, and that it is useless to try preliminary reduction. A number of patients whose fracture-dislocations have been reduced have regained a completely normal range of movement and a foot which from every other point of view is indistinguishable from normal. It cannot be denied that a normal foot is better than an arthrodesed foot.—We are, etc.,

R. WATSON-JONES,
H. OSMOND CLARKE,
London. Royal Air Force Consultants in Orthopaedic Surgery.

Artificial Respiration

SIR,—The recent discussions in the *Journal* concerning the most efficient method of artificial respiration and Dr. Tingley's article on the rate thereof prompt me to write in order to emphasize a fundamental point apparently neglected by lecturers and instructors in first aid—the importance of maintaining an efficient airway in the patient, without which any method of artificial respiration is valueless.

As a divisional surgeon to the Metropolitan Police it has been my duty to attend a considerable number of cases of asphyxia—mainly suicidal and the result of coal-gas poisoning. On my arrival I almost always find the victim in the open air receiving artificial respiration by Schäfer's method; but I cannot recall a single occasion on which I was satisfied that there was any tidal exchange of air. Frequently the asphyxial element had caused such a degree of respiratory obstruction that efforts at artificial respiration have actually progressively reduced the residual air in the lungs. Perhaps the practical demonstrations which first-aiders have had, being, as they would be, on live and co-operative subjects, has misled them into thinking that artificial respiration is equally easy on the flaccid asphyxiated subject. In this respect I blame the Schäfer method (as opposed to the Silvester), as it assumes that because the patient is prone the tongue must fall forward and the airway is therefore assured.

I suggest that in teaching first aid: (1) Every possible emphasis should be laid on the importance of an adequate airway. Every breath should be heard, in both inspiration and expiration; and all other details of the "drill" such as timing and position of patient are secondary to this. (2) Every resuscitation outfit (such as the "Novox" apparatus carried in most accident ambulances) should have as an addition a set of pharyngeal airways of varied sizes of the type known to anaesthetists as Guedel's. These are all rubber and atraumatic (one can, in fact, be worn by a conscious patient without gagging), and five minutes' instruction would make an ambulance attendant competent to fit one of the appropriate size. The O/CO_2 mixture could then be administered or artificial respiration carried out with the confidence that an efficient airway had been provided and would require no supervision for its maintenance.—I am, etc.,

Ilford, Essex. RONALD PETERS.

The Metric System and Medicine

SIR,—One of the stumbling-blocks, possibly the largest, to the general use of the metric system in prescribing is the reluctance of examining boards to insist on the use of metric dosage by examinees. The personal responsibility for this lies, therefore, with the clinical teachers. Their reluctance to prescribe in terms of the metric system is based on the fact that they were brought up on imperial weights and measures; many of us would be hard put to supply a metric equivalent with any promptitude. A similar position arose in like manner during the change-over from the old to the new anatomical terminology. This inertia, though very human, is deplorable. Its early eradication can be achieved only by compulsion on the part of the examining bodies.

Although in many instances the metric dose is just as easy to learn as the imperial equivalent, this is by no means always the case. The *B.P.* frowns on the milligramme and uses fractions of a gramme; this method is consequently followed in most of the textbooks. One example will suffice to show why the other system is still so much in favour: physostigmine salicylate, 1/100 to 1/50 grain—0.0006 to 0.0012 g. It may be argued that it is perfectly simple to convert the latter to milligrammes; this is true, but the student's labours are unnecessarily increased if, whilst learning his posology, he has also to carry out a conversion with each metric dose. Examiners will much prefer to hear of milligrammes rather than fractions of a gramme. It would be a great help to the student if textbooks were to give metric doses in the manner that they are used in the wards, leaving the less easily memorized *B.P.* decimals in brackets.—I am, etc.,

London, W.1. A. H. DOUTHWAITE.

SIR,—I fully agree with the opinions and reasons already expressed on the above topic. To my mind the ideal time has arrived to change over and prescribe in the metric system.

The apothecary system is clumsy and out of date, and a few examples should readily convince anyone who doubts. There is, of course, a definite relationship between grammes and cubic centimetres, but not correspondingly between grains and minims. The pharmacist, too, has often to distinguish between 1 oz. avoirdupois of 16 drachms which weighs 437½ grains and 1 oz. apothecary which contains 480 grains—i.e., 8 drachms of 60 grains; thus a difference of 42½ grains between the two ounces. Approximately 1 c.cm. of water weighs 1 gramme, but one minim of water does not weigh one grain, for in round figures 110 minims is the volume occupied by 100 grains or, to simplify this, for example, a 1% aqueous solution would contain 1 gramme in 100 c.cm., or 1 grain in 109.7142 minims. Consequently, many errors in calculations, some of which

might be dangerous, could be avoided by the introduction of a simple decimal system. Furthermore the contraction of 1 gr. and 1 gm. in writing might be easily confused, yet a gramme is 15½ times heavier than a grain. The mental arithmetic involved at first in reckoning and converting grains and minims into grammes and cubic centimetres would not be very difficult.

In conclusion it might be worth while to quote from page x of the preface to the *British Pharmacopoeia* of 1914—i.e., thirty years ago: "The metric system has been employed for the specification of doses, in the expectation that in the near future the system will be generally adopted by British prescribers."—I am, etc.,

Shebbear, North Devon. S. A. W. Rushbrooke.

Liver Function

Sir,—In the annotation on tests of liver function (Sept. 16, p. 378) you deal with the relation between the liver and the serum proteins. Quoting J. Post and A. J. Patek (1943) you state that "in chronic liver disease, notably cirrhosis of the liver, the serum albumin is generally reduced, whereas the serum globulin is normal or increased," and that a defect in the synthesis of serum albumin seems to be the underlying cause, qualitative rather than quantitative alterations of the serum proteins being the decisive disturbance.

The full recognition of this important disturbance and of the role of the liver in protein synthesis is fairly recent. Impairment of this function may occur quite early in liver disease, is completely restorable, and is best tested for by means of one of the flocculation tests whose results depend upon the protein pattern of the serum.

When studying the factors which lead to the appearance of a positive Takata reaction I was able to demonstrate already in 1936[1] and in 1938[2] that, apart from quantitative alterations, changes of a qualitative nature existed in the serum albumin of liver cirrhotics, and I believe that these findings were the first to suggest the existence of such an alteration. Previous investigators had dealt only with alterations of the albumin–globulin ratio in liver disease.

The experiments in question consisted in separating the serum albumin and the serum globulins of normal persons and liver cirrhotics by fractional precipitation, in mixing the albumin fraction of the former with the globulin fraction of the latter, and vice versa, in varying proportions, and in testing the behaviour of these mixtures towards the Takata reagent (a mercury oxychloride formed by interaction of sodium carbonate and mercuric chloride). No differences in behaviour were observed between the two kinds of globulin. The precipitate formed on addition of the Takata reagent to a positive serum is serum globulin, while serum albumin protects the globulin from flocculation. It could, however, be shown that normal albumin affords a definitely greater degree of protection than an equal amount of albumin derived from liver cirrhotics, and also that pure solutions of the two kinds of albumin which can be precipitated by high concentrations of the Takata reagent differ in so far that the serum albumin of cirrhotics needs much less reagent for its flocculation than that of normal persons. The conclusions drawn from these experiments were (1) that a quantitative decrease of the serum albumin with a more or less marked increase of serum globulin occurs in liver cirrhosis, (2) that a physico-chemical alteration of the serum albumin is present, and that these changes are most likely due to an impairment of the protein-synthesizing function of the liver.

In a more recent paper,[3] which dealt with the results obtained by means of a modified Takata reaction[4] by different authors on 2,600 cases, the assumption was made that also in certain non-hepatic diseases in which similar protein changes occur in the serum and positive flocculation tests have been encountered (certain cases of pneumonia, hyperthyroidism, rheumatoid arthritis, diabetes, pernicious anaemia, acute nephritis, lymphogranuloma inguinale, Kahler's disease, etc.) a disturbed protein synthesis by the liver was likely to be responsible for these changes.

It may be argued that the beneficial effect produced by a highly nutritious diet, rich in protein but poor in fat, on experimental and clinical liver cirrhosis is partly due to the liberal supply of protein, which may be helpful in adjusting the protein metabolism deranged by the defect of the liver in protein synthesis.—I am, etc.,

London, W.1. H. Ucko.

References

1 Ucko, H., *Klin. Wschr.*, 1936, **15**, 1074.
2 —— *Acta med. scand.*, 1938, **97**, 557.
3 —— *J. Lab. clin. Med.*, 1942, **28**, 17.
4 —— *Guy's Hosp. Rep.*, 1936, **86**, 166

Meeting of Whole-time Specialists

Sir,—A committee has been formed to consider the effect of the White Paper proposal on the consultant and specialist services of the country. The Royal Colleges, the specialist associations, the provincial teaching hospitals, the provincial non-teaching hospitals, and the British Medical Association are represented on the committee.

A large number of specialists attached to hospitals are employed as whole-time officers of local authorities, and we think that they, as a group, should be represented on the committee. The President of the Royal College of Physicians, as chairman of the committee, is sympathetic to this proposal, and is willing to submit it to the committee. It is therefore proposed to call a meeting of specialists employed whole-time by municipal authorities on Friday, Oct. 20, at 5 p.m., at the Royal College of Physicians.

It is hoped that as many as possible will attend to make the meeting fully representative. No individual notices are being sent out, and we ask specialists to draw their colleagues' attention to this letter, and we hope that the medical officers of health will, so far as possible, enable the specialist members of their staffs to attend the meeting.—We are, etc.,

C. Allan Birch. J. E. McCartney.
Allen Daley. George F. Stebbing.
Horace Joules. D. M. Stern.

Intramuscular Quinine

Sir,—In the *Journal* of Sept. 23 (p. 413) Dr. W. L. Peacock suggests the use of quinine lactate for intramuscular injection in malaria in place of the hydrochloride. Some years ago (*Lancet*, 1934, **2**, 1101) I introduced quinine lactate in the injection treatment of varicose veins, when I found it less liable to give rise to painful reactions than the commonly used hydrochloride of Génévrier's solution, and less liable to cause sloughing if it was deposited outside the vein. Since then I have often wondered why it is not in routine use when quinine is given parenterally. A saturated solution of the salt in water is about 16.6%.—I am, etc.,

Birmingham. J. W. Riddoch.

Functional Hypoglycaemia

Sir,—I have read with interest Dr. Prunty's article in the *Journal* of Sept. 23 (p. 398) and agree with him that the term "functional hyperinsulinism" is not a good one. His term "reactive hyperinsulinism" in my opinion is open to the same objection—namely, the use of the word "hyperinsulinism" in the group of cases he describes. In America and in this country the term "hyperinsulinism" has come to be associated with the presence of a tumour or diffuse hyperplasia of the islets, and its use in connexion with the condition more generally known as "functional hypoglycaemia" seems to me not only to be creating unnecessary confusion but also an impression that this disease is in fact due to the excessive production of insulin, of which there is nothing more than suggestive evidence.—I am, etc.,

London, W.1. Wilfrid Oakley.

London Medicine

Sir,—Dr. Walshe's article in your issue of Sept. 2 is one of the signs of the increasing attention now being paid to post-graduate education in this country, more particularly in London. For many years, as the Goodenough report reminds us, quoting Sir William Osler, London has failed to occupy the leading position as a postgraduate centre for which it has long had the potentialities. Dr. Walshe's article adds to one's forebodings. The pendulum seems to be swinging back too far, with the dangers of over-interference and over-planning. It has, of course, long been desirable that the lack of organization and cohesion characterizing London postgraduate facilities should be remedied, and, *pari passu*, that the great resources of the Metropolis in patients, hospitals, and expert medical men should be marshalled and constructively co-ordinated in such a way that all types of practitioner—the general practitioner, and rising consultants and specialists—shall find easily the advanced professional instruction or training which they may need in a

fullness and a form worthy of what should be the greatest school of medicine in the world. To obtain this generous end should be our ideal, but we must be wary of the danger of over-planning particular parts of it to the neglect and imperfection of the whole.

The Goodenough report recommends, as part of the innovations of the National Health Service, university supervision of postgraduate education in London, together with extensive subsidies. If Parliament agrees to this, what immense benefits may flow from wise investment of the grants, and what disappointment and failure of attainment could follow the maldistribution of funds, conditioned by restricted vision, prejudice, or undue sectional influence! To prevent the establishment of possibly obstructive vested interests on the one hand and a starvation of progress on the other, university supervision and financial assistance should be as widespread and inclusive as possible. Only in this way can the full development of the London School of Medicine, in the widest and wisest sense of the term, be assured. Any scheme which bolsters up part of this school (a part which, from the nature of things, would probably contain the more undesirably vociferous and own-trumpet-blowing sections) and neglects the rest might well produce a distorted, ill-balanced result falling far short of London's best. In this connexion, the Goodenough report, with its complicated play upon what are, and what are not, recognized schools of the University of London, causes one some anxiety that limited and destructive discrimination may be made. University recognition in London has hitherto been patchy and unsystematic. In future all voluntary hospitals in the London area staffed by consultants should be invited into the University postgraduate scheme. Those entering can be kept, with financial aid, up to the necessary standards—not that most of them are not clinically up to standard now. Postgraduate teaching in London should be as widely based as possible, and all available resources should be used in order that the highest cultural, as distinct from technical, standard—the importance of which Dr. Walshe rightly emphasizes—should be attained. This can only be done by the inclusive policy just described. Not only should the teaching be cultural in the professional sense; the more educational contacts London postgraduates can make with cultural influences in London outside medicine, so much the better.

Characteristic of London Medicine is its disunity—a state of affairs which detracts greatly from its dignity. It is no secret that high authorities, such as the Voluntary Hospitals Committee of London, King Edward's Fund, and many personalities of standing in the hospital world, have in recent years attempted to introduce some element of greater combination and co-operation between the voluntary hospitals in London. It is also no secret that most of the opposition to this sensible and progressive development has come from the narrow prejudices, jealousies, and dislikes of medical staffs, described to me by one experienced hospital secretary as "childish." The broader the general cultural outlook the less likely is this disunity to persist, and, conversely, the more general unity and co-operation that can be attained the better will be the cultural effect upon the medical men working in the hospitals. The best training for consultants and specialists, the expert clinicians, is surely one as broadly based as possible, taking the form of climbing the ladder of appointments in a number of different hospitals until the highest rank is reached. The contact with hospitals and teachers should be wide, giving the rising men the opportunity to observe contrasts and make comparisons, rather than restricted and confined to some single, highly rarified, and exclusive school. The culture of the latter (rather the type of culture extolled by Dr. Walshe, I am afraid) would be hard, narrow, and self-complacent, breeding consultants with the disdainful outlook of high-caste, humourless Brahmins, contemptuous of all the clinical untouchables trained elsewhere, however competent they might be.

Dr. Walshe seems unduly hard on the "refresher" and similar courses. Organized demonstrations and participation in the practice of hospitals, etc., need not be deadening or repetitive (any more than undergraduate teaching is), and are very valuable to men working for the higher general examinations, like the M.R.C.P., the cultural value of which Dr. Walshe rightly stresses. I agree that their value for general practitioners is not so great, but it is far from being despicable. Such teaching does mean hard work, however, and I suspect that this has something to do with its unpopularity, although some more highfalutin reason has to be found for its overt condemnation. The enormous success and popularity of the Fellowship of Medicine since the last war is evidence of the value of such teaching. I am informed that by the end of 1943 over eleven thousand postgraduate students had made use of the Fellowship's facilities, and the moneys paid in fees by the Fellowship to hospitals and teachers had exceeded £50,000 since the end of the last war. Are not these figures astonishing, and do they not suggest that a real want was met by this organization, having Sir William Osler, Sir Arbuthnot Lane, Sir John McAllister, and Sir StClair Thomson as its fathers? Has it not earned more than the curt footnote that is its only mention in the Goodenough report, and which is a reflection upon the depth and judgment of this report itself?

A distinction needs drawing between the professional consultant practitioner of his subject and the whole-time research worker. Although the former may well make generous original contributions to knowledge, the essentials of training are different for the two. A training suitable for the research worker may well be too intensively narrow to be suitable for the practitioner. Subsidized institutes based on single hospitals would, I feel, suffer from this narrowness and tend to produce the Brahmin-like type of consultant I have described. In the training of specialists great evils lie in the artificial confining of higher education to single officially privileged schools. Apart from those already mentioned, training in a single school will tend to produce a snobbish rigidity of outlook and an artificial set of standards—that is to say, everything and everyone emanating from the privileged institution will necessarily be classified as of the best, like persons of the blood Royal in an age of Divine Right, because of their origin, irrespective of their intrinsic merits. In contrast, merit that is impertinent enough not to originate in the privileged institute (and merit, unfortunately, cannot be confined in or conjured at will, like genii, from any chosen academic bottle) will tend to be defamed and belittled. If a single institution gains official recognition as the sole training school in a subject, it will become, in the new schemes, a very definite financial interest, with all the undesirable temptations associated therewith.

There is clearly much that is attractive in the establishment, under university supervision, of institutes in special subjects, but there is much that is narrow and short-sighted in the suggestion that these should be based on one special hospital and one general hospital only. To take something less personal than neurology, it is suggested in the Goodenough report that an Institute of Child Health be formed, based on Hammersmith and Great Ormond Street Hospitals. It is revealed that negotiations between these two hospitals have been going on for some time. How much more stimulating, full of broader possibilities and worthier of London would be, on the other hand, a London University Institute of Child Health, including not only Great Ormond Street but also the Belgrave, Victoria, Queen Elizabeth, Evelina, Princess Louise, Paddington Green, and the Infants' Hospitals, together with a relationship with, possibly, several of the voluntary general hospitals in London not teaching undergraduates, such as the Royal Northern and the Prince of Wales's Hospitals, as well as with Hammersmith Hospital. This would, indeed, show the paediatric resources of London at their best, which the restricted proposal of the Goodenough report would not. Broader thinking for London as a whole is needed on this great issue, and sectional interest must not unwittingly be officially favoured.—I am, etc.,

T. Rowland Hill.

Postgraduate Medicine

Sir,—The generous hospitality of your columns accorded me on a recent occasion to express some views upon undergraduate instruction encourages me to ask for an extension of your indulgence for some observations on postgraduate medicine, a topic which has stimulated the interest of several correspondents, particularly in regard to "refresher courses" for the general practitioner.

That wide differences of opinion have emerged, varying from unqualified approval to complete condemnation, is not surprising

to those of us who have participated in such courses, both as students and as teachers. The trouble is to satisfy the requirements, indeed the expectations, of such widely different participants. Here is the very old gentleman who has for over forty years been peacefully isolated in the heart of the country, and who desires a sort of Cook's tour which shall be, as comprehensibly as possible, representative of all that has happened in the world of medicine and surgery in, say, the last quarter of a century. There is an ambitious youngster on the eve of his M.R.C.P., avid to absorb all the latest biochemical research of examination value. Next is a recently retired Service man intending a return to practice and to recover as rapidly as possible the clinical atmosphere obscured by several years of administrative activity. Then a successful provincial G.P., who has acquired a local reputation as a specialist, and demands the fullest exposition of his particular subject. And here is a breezy man from the Midlands (or elsewhere for that matter) who has no hesitation in admitting that he regards the whole affair as an opportunity for a binge. Clearly the preparation of a schedule on a *table d'hôte* system is going to please nobody; the alternative of an *à la carte* seems theoretically sound but is not so easy to arrange. Moreover, the fare provided may be right enough, but the method of presentation is open to criticism. The more experienced object, and reasonably, to being treated as medical students: the assumption by the lecturer of an established acquaintance with his subject brings a protest that he is right above the heads of most of his audience. And anything highly specialized will most probably appeal to nobody at all. I have seen an hour wasted on the elaborate description of vestibular tests which even the expert himself had to work up the night before. I have sat under a recognized leader in the world of pathology dealing with all the technical details of the performance of the Wassermann reaction, and—believe me or believe me not—on his appealing at its conclusion for any questions or remarks, an awkward silence was terminated by an assurance from an enthusiast in the front row that he now understood that the rabbit was a victim of congenital syphilis.

One of your correspondents, Dr. Trevor Howell, approaches the "refresher course" from another angle in advocating a prolonged period of practice in hospital in the capacity of clinical assistant. With that I am in hearty agreement, but such a procedure would hardly recommend itself to the official promoters of a "refresher course" which embodies the somewhat pernicious idea of an intensive attempt to "be brought up to date." Comparisons are often made between post-graduate instruction in this country and on the Continent. I know how such instruction is organized in Vienna, or at least how it was organized thirty years ago, and I think that adverse criticism of our performance is not fair. The time and energy unavoidably dissipated by the vastness of the Metropolis and the difficulty of collecting and utilizing our material make adequate organization impossible. But this is outside the present consideration, the "refresher course" for the general practitioner, which we shall certainly be called upon to provide in post-bellum reconstruction.—I am, etc.,

London, W.1. ADOLPHE ABRAHAMS.

Psychological Medicine and the Family Doctor

SIR,—Dr. R. D. Gillespie (Aug. 26, p. 263), as a specialist himself of long standing, says in effect that the old family practitioner was in a much better position to understand, and therefore to deal with, the psychoneuroses of daily life than is the highly specialized modern expert, by whatever name he styles himself (and perhaps I might add, whether lay or medical). The fact is that in the palmy days of the old family doctor—particularly in the country—these psychoneuroses did not exist, or at least not to anything approaching the modern extent; and this precisely because the family itself still existed as the basis of social life, and self-respecting and sympathetic parents brought up their children intelligently, and so nipped such conditions in the bud. Where parents had difficulty in this they consulted the old and tried friend of the family, the local G.P., who knew every one of them "from father to son," and all their circumstances in space as well as time. Now, however, the family is disappearing swiftly, and never more so than at present, since this world war of unprecedented brutality has set its seal on a long era of cut-throat "industrial" competition.

The outlook for sanity, let alone ordinary mental and moral equipoise, is black indeed. What, for example, is to be done with all the poor shattered "psyches" which the global war everywhere is leaving in its slimy train? This at least can be forecast. The problem will not be solved primarily by the psychological specialists, since they, as Dr. Gillespie has shown clearly enough, are not in a position to evaluate duly all the factors.

It is just possible that our profession itself might solve the problem, but this only on condition that it foresees the further instalment of slavery which the State now proposes to foist upon it, and that it resolves to restore at once the family doctor to his rightful place as the driving-wheel of the *Ars medendi*.—I am, etc.,

North Queensferry, Fife. A. J. BROCK.

Bureaucracy and Wet Babies

SIR,—Although I have been engaged in busy medical practice for half a century, I have found time to read my *B.M.J.* every week. But, although I am also a prolific writer, I rarely intrude on pages which are rightly handed over to my senior and junior professional pastors and masters.

This week, a moment's respite coinciding with a touch of the *cacoethes scribendi*, I feel a desire shortly to comment on three items in your issue of Sept. 23. One item is your review of Prof. Mackintosh's *The Nation's Health*, on which the only thing I have to say is that, basing my opinion on experience and first-hand observation, I think that nearly all Prof. Mackintosh says and hopes to do, or see done, is in my opinion sound. The second item is your leader titled "Medicine and Politics." I am an old admirer of Lord Dawson of Penn, and in the present instance intellectually in enthusiastic agreement with his "wise letter" published in the *Times* of Sept. 16. Doctors entered on dangerous ground when they began to play that national game known as party politics. The third item—possibly the most important of all—is Dr. S. M. Halliday's letter on "Wet Babies," written from Zennor, a lovely bit of Cornwall, every yard of which bit I know and love. This letter gives us some common sense expressed in plain English. I hope it will act as a model for other letters dealing in a humorous honest way with problems which confront general practitioners every week, war or no war.—I am, etc.,

Hawkley, Hants. HARRY ROBERTS.

Service Medicine

SIR,—The letter in your issue of Aug. 19 (p. 255) under the above heading and over the signature "Temporary Serving Officer" seems to have a distinct flavour of "sour grapes." Your correspondent does not specify to which of the three Services he is at present attached, but by thus signing himself he makes it evident that he can have but a very limited knowledge of the many intricacies of administration inseparable from huge organizations such as the Navy, Army, or Air Force Medical Services.

His idea that administration consists of "signing redundant documents unread" may be dismissed as childish petulance. Does he seriously suggest that the enormous amount of work involved in organizing the medical and surgical units operating on all the various fronts can be "devised and operated for the most part by people whose training is far shorter than that required to graduate in medicine" or that this job can be done by men with no previous medical knowledge?

He is incorrect in stating that the Regular officers hold nearly all the key positions. They do hold a large number, of course. That is quite natural. But many non-Regular medical officers, both in the last and in the present war, have risen to high rank in the Army, not through any undue influence, but by virtue of their own outstanding abilities. For instance, the D.M.S. Egyptian Expeditionary Force in Palestine during the last war was a Territorial officer and a non-regular. "Temporary Serving Officer" seems to be smarting under a sense of grievance that he has not attained high rank. At least, that is the impression one gains from his letter. But I can assure him that he will not

get very far if he adopts a self-righteous attitude by insinuating that he is one of their "professional betters." Many Regular officers in the three Services are very well qualified professionally and have deservedly attained their present position by sound and honest work. Surely after the long years of service they are entitled to that rank.

That red tape and other faults exist in the Medical Services cannot be denied, but these will never be remedied by such biased attacks on the senior Regular medical officers, who are in no way responsible for the existing regulations. The spate of documents which have to be signed by all military and naval medical officers are often very irksome, but it should always be remembered that every medical certificate, however unimportant it may seem, may have an important bearing on the soldier's ultimate chances of a pension, and injustice to that soldier may very easily be inflicted by a carelessly worded or illegible certificate. To ensure that this does not occur is the essence of good administration which your correspondent "Temporary Serving Officer" so much derides.—I am, etc.,

J. R. Pooler,
Lieut.-Col., R.A.M.C. (T.A.), retired.

Medical Services—Home and Colonial

Sir,—May I congratulate you on some of the letters published in the current issue. After thirty years' experience, Civil Service, Army, and local government service, I would like Dr. Purcell (Sept. 23, p. 417) to know that it is not necessary to go to the Colonial Service to find a similar state of affairs. I feel that, where medical administrators are appointed by laymen, this kind of thing is likely to happen. If posts of this kind could be filled in some way through selection by one's colleagues a more satisfactory result might be obtained.—I am, etc.,

Thomas Lindsay,
Medical Superintendent.
St. Lawrence's Hospital, Caterham.

Demobilization and the E.M.S.

Sir,—With the vexed question of demobilization now under open discussion the broad principle of age and years of service can reasonably be accepted as a basis in assessing priority for return to civilian life. I would also advance a plea for the inclusion of other forms of national service when applying such a scheme. In particular I would refer to whole-time E.M.S. service. If one recalls the days of Dunkirk, these hospitals were staffed by virtual conscription, mostly at a few days' notice, of senior residents and junior staff of the large voluntary and municipal hospitals, to meet a very grave national emergency. The Ministry of Health then required a contract to be signed, and at a later date refused to consider any release till a satisfactory substitute had been obtained. This situation continued throughout 1941, and not until the demands of the Services became insistent, at the beginning of 1942, was the situation eased. The E.M.S. Hospital Services during this time cared for the majority of the Service sick and wounded as well as the air-raid casualties, evacuated sick, and industrial accidents. It can be truthfully stated that whole-time service in an E.M.S. hospital was, at this time, of equal importance in prosecuting the war as service in the armed Forces. It is only fair that such service should be counted when assessing the priority of a medical officer for demobilization. It should also count towards the proposed increase in pay after three years' service. I would personally suggest that a year be added to the age for each three months' service in a B1 appointment and for each six months in a B2 post.—I am, etc.,

Robert J. Rutherford.

Tapeworm in Trout

Sir,—In his letter (Sept. 16, p. 385) Mr. K. Unsworth refers to the note by Mr. J. R. Harris and myself (Sept. 2, p. 310), and implies that we regard the Dublin outbreak and the outbreak in a South Wales reservoir, which was reported by Guguid and Sheppard, as being similar. The two outbreaks are undoubtedly similar in so far that a widespread mortality of reservoir trout has resulted from heavy infection with pleroceroids of the family Diphyllobothriidae. Beyond this any similarity which may exist remains a matter for demonstration, and it was for this very reason that we did not suggest that the same species of *Diphyllobothrium* is involved in each case. Indeed our investigations so far point rather in the opposite direction, as we have failed to infect the dog, a mammal which was infected both by Duguid and Sheppard and by Unsworth when fed with plerocercoids from the South Wales fish.

Mr. Unsworth further states that we have not given sufficient evidence to show that the adult tapeworms found in the birds resulted from the ingestion of plerocercoids from the trout, but I feel that he has not attached sufficient importance to our statement that specimens showing all degrees of a gradual development from typical plerocercoids to the fully developed tapeworm were found in the infected birds. Thus in some of the birds a number of plerocercoids, a number of immature tapeworms of varying degrees of development, and a number of mature worms were present. Our article was, as stated, merely a preliminary note, and experimental details would have been out of place. To avoid any possible misunderstandings, however, it may be stated that we have succeeded in infecting black-backed and herring gulls and a shag by feeding them with plerocercoids from the trout. The details will be published in due course.—I am, etc.,

M. D. Hickey.
Dublin.

Why Vesalius chose Basle

Sir,—Your leading article of Sept. 23 states that "it is a puzzle why Vesalius, working at Padua and often visiting Venice, the great neighbouring printing centre, should risk wood-blocks and MSS. by sending them across the Alps on a journey of 350 miles, to have his work published at Basle." The suggestion that the situation of Basle made it a convenient distributing centre furnishes only a partial solution. There were other reasons for this selection.

From its association with Erasmus, intellectual dictator of his age, the Swiss university town had become something of a literary Mecca, and many famous theological works, the best-sellers of the period, had been published there. Calvin's *Institutio* (1536) and the collected Erasmus (1540) were products of the Basle printers, who had the necessary connexions with the countries to which Vesalius evidently looked for his readers.

Notwithstanding the quality of the Venetian craftsmen, whose skill in art reproduction and fine printings of the classics enjoyed such a high reputation, it is doubtful if Venice was the best centre for the international presentation of original scientific works—your article refers to the fact that Italian medical publications were apparently little known in Paris. The number of foreign copyists of the *Tabulae*, which were printed at Venice, indicated that, with the proper introductions, an illustrated anatomical work was assured of a large public outside Italy. Vesalius, who had already made use of the facilities offered by Basle, decided to have the *Fabrica* published at that centre.—I am, etc.,

G. W. Ronaldson.
Park Hospital, London, S.E.

Early Days at Johns Hopkins

Sir,—Sir Charles Gordon-Watson complains that the article on "Early Days at Johns Hopkins" omits reference to Harvey Cushing. Apparently he forgets that the history so far published ends with 1893, eight years before Sir Charles tells us that he met Cushing when he was a young surgical resident officer. Doubtless ample justice to this distinguished man will be done in a subsequent volume.—I am, etc.,

The Writer of the Article.

The annual report for 1943 by the Curator of the Laboratory, Royal College of Physicians of Edinburgh, states that a reorganization of the work and scope of this institution will soon become imperative on account of changes in its relation with the Carnegie Trust. In the future the demand for laboratory verdicts may be expected to increase, and the large-scale reporting work involved will help the research department in two ways—by collecting useful information and by providing financial support. It is hoped that research work in the fields of haematology and statistics may be considerably extended.

Obituary

R. HIGHAM COOPER, C.B.E., L.S.A.

Dr. Robert Higham Cooper, formerly a well-known radiologist in London and during latter years at Bournemouth, died on Sept. 25 at Bournemouth aged 66. At the Annual Meeting of the B.M.A. in 1934 he was vice-president of the Section of Radiology and Electrotherapeutics. Educated at Macclesfield Grammar School, Owens College, Manchester, and at Charing Cross Hospital, he was for a year assistant to Sir James Mackenzie Davidson before qualifying L.S.A. in 1904. He served for 15 years as medical officer in charge of the electrical and *x*-ray department at University College Hospital and at Moorfields Eye Hospital, and he had been a member of the visiting staff at the Prince of Wales's General Hospital, Tottenham, the Evelina Hospital for Sick Children, the Royal Waterloo Hospital for Children and Women, and at the West End Hospital for Nervous Diseases; he was also for a time lecturer on radiology at the Seamen's Hospital, Greenwich. For the greater part of the last war he was consulting radiologist to the British Armies in France, with the temporary rank of lieut.-colonel, R.A.M.C., and in the early part of 1919 became radiology adviser to the London Command. He was mentioned twice in dispatches for his war work and awarded the C.B.E. After the war he held the post of radiologist to the Egyptian Government for three years and became a member of the War office *X*-ray Committee. Settling in Bournemouth, he was for some years medical officer in charge of the light department of the Royal Victoria and West Hants Hospital, and he served during the present war as radiologist to the E.M.S. at Christchurch. Dr. Higham Cooper wrote a small book in 1909 on *The Uses of X Rays in General Practice*, and contributed papers on his specialty to this and other journals.

SIR HUMPHRY ROLLESTON

SIR EWEN J. MACLEAN writes:

It was a great privilege to know Humphry Rolleston, and I appreciated this during his Presidency of the Royal College of Physicians, and more intimately during the twelve years I was chairman of the B.M.A. Science Committee. Sir Humphry was one of the most distinguished of the many distinguished men who have been elected members of that committee, and in its camaraderie there was never, on his part, the slightest trace of insistence on any deference to his status—one, surely, which based on heredity and recognized achievement represents one of the very brilliant careers of our time.

The main purpose of this short note is to claim that much of the devoted service Sir Humphry rendered to the Association was effected through the medium of the Science Committee, and I recall, in particular, the weight of his advice and guidance in our conferences with representatives of the Pharmaceutical Society and of the chemical manufacturers regarding the difficult subject of proprietary medicines; then again his close attendance in the various contacts and subcommittees which have resulted in the establishment of a Diploma in Physical Medicine were of the greatest help; and he was an indispensable member of the committee for the allocation of the science scholarships, grants, and prizes. He took an especial interest in the award of the Sir Charles Hastings Clinical Prize for general practitioners, and it became the practice of the committee to refer the award to Sir Humphry in conjunction with Prof. (now Sir) Francis Fraser. The report with the analysis of the works submitted was a delight to read.

With his many commitments it was little short of amazing that Sir Humphry was so consistently regular an attendant at committees, whether the agenda dealt with special or routine matters. The tragic death in Zanzibar in 1936 of his only surviving son was a great blow, and I remember his saying, somewhat quaintly, at a subsequent date, that it must have been when he was with us quietly transacting our committee business that his son was succumbing to the rioters. The Association has lost a great friend and a great supporter in the difficult times ahead.

FRANK DOUGLAS MARSH, F.R.C.S.

H. W. F. sends the following personal tribute, supplementing and correcting the notice printed on Sept. 30:

By the death, at the age of 55, of Douglas Marsh, the staff of the Birmingham Medical School has lost a valued colleague, and the Midlands of England has been deprived of the services of one of the leading consultants. In the 1914 war Marsh served four years, held a D.A.D.M.S. appointment, and received the *M.C.* After the war he took up the study of ear, nose, and throat surgery, and in due course became surgeon in the ear, nose, and throat departments of the Queen's Hospital, afterwards part of the Birmingham United Hospital, and of the Birmingham Children's Hospital. Marsh threw himself into these duties with energy, sound technical skill, and sane judgment, which was reminiscent of his father, the late Col. Frank Marsh, F.R.C.S.; moreover, he rapidly acquired a very large private practice. He sustained, throughout his exceptionally busy life, a high reputation for reliability as a surgeon, and for perfect time-keeping. He remained on the Territorial Reserve of Officers, and in September, 1939, he was called to serve as major, R.A.M.C. For the next three years he was stationed at the Royal Victoria Hospital, Netley, as ear, nose, and throat specialist. In this capacity he soon acquired a reputation for hard work and sound practice, which was as high as in civil life. About two years ago arthritis compelled him to return to civil life. He resumed his Birmingham work, and notwithstanding his desire to reduce his labours, the demand for his services was so great that he could obtain but little respite. During the earlier part of this summer his health failed.

Such is the outline of the life-work of a remarkable man. Tall, erect, grave, courteous, and rather shy, Douglas Marsh was a man of few words but strong ideals. His admiration for his father, who was a Victorian, and in his day a model of energy and shrewdness, encouraged his own steadfast application to his profession, and consequently he had little time for relaxation—although at golf in his youth he had been more than good. He loved good pictures, good furniture, pleasant people, and a quiet chat. He wrote little, though his articles were characterized by balance of judgment and care in the choice of words. But as a practising surgeon he developed carefully selected and highly polished methods, both in the operating theatre and in the consulting-room, which enabled him to carry out an enormous amount of work of a uniform high grade without hurry, and apparently without fatigue. His calm manner betrayed neither weariness nor anxiety nor signs of irritation. This characteristic attitude was well known to a wide circle of patients, doctors, and fellow workers. His intimate friends, however, were fully aware that underlying this achievement of professional skill and manner there was a sensitive man who felt both fatigue and depth of anxiety, and, moreover, a sense of humour which his reticence seldom permitted him to exhibit. To Mrs. Marsh, formerly a brilliant student of the Birmingham Medical School, and to their son our warm sympathy is extended in the loss of a husband and a father, who was not only an invaluable doctor to others but a staunch and beloved comrade to them.

G. FOSTER BARHAM, M.D.

Sir Hubert Bond sends the following tribute to the memory of Dr. Guy Foster Barham, whose career was briefly recorded in the *Journal* of Sept. 23:

For 27 years Foster Barham filled the onerous post of superintendent and physician-in-chief of Claybury Hospital, which, when opened in 1893, was the fifth of the County of London's mental hospitals. After some resident general hospital experience he joined the staff at Claybury, of which Dr. (afterwards Sir Robert) Armstrong-Jones then was superintendent. There his interest in psychological medicine was aroused: every year deepened it, and it was to his great satisfaction when in 1907 he was appointed deputy superintendent of Long Grove, the ninth and newest of the L.C.C.'s mental hospitals, which then was just about to receive patients. Here for the next ten years he found wide scope for his great talents, and though as senior medical officer of the women's division with its 1,100 beds his administrative duties were many, it was ever towards the clinical side of his work that his main interests lay. Those were the days when the effect of Freud's work tended to be dominant: they were the days, too, when mental hospitals were far less well equipped than now with *x* rays and other means of physical investigation really thorough in character, nor was there attached to any of them an active team of visiting specialists. Barham, while never losing his foothold in the bodily organism as a whole, was attracted strongly towards psychotherapy and spared himself no pains, often with striking success, in using it in accessible psychotic states. This attraction can be seen in the thesis for his Cambridge doctorate—"The Influence of Emotional Conflicts and of Repressed Emotion in the Causation of Abnormal States of Mind"—and in many of his case studies. August, 1917, saw him back again at Claybury, this time as superintendent. There, in response

to the ever-increasing demands for further facilities in the treatment of mental disorders, he was able to initiate many improvements. One was the erection of Forest House, to which his name deservedly some time might be given; for, designed with scrupulous care to meet the needs of early and sensitive cases, for whom he felt the large building was unsuitable, it truly was his child. He took, too, an ardent interest in efforts to improve the status and training of mental nurses, and was an active member of the 1922–4 departmental committee on that subject.

An accomplished physician in the best sense of those words, Barham possessed a fastidiousness of taste which led him always to seek the best. He had, too, a tidiness of mind which characterized all his work. These attributes were reflected in his bearing and person and gave the impression, which indeed was true, of some one able to bear responsibility and to direct. These are no mean assets in the control and administration of a big hospital with its 2,300 beds and some 500 staff; likewise of no small value in the handling of patients whose illness, when long continued, tends to neglect of person and deterioration in habits. Perhaps in no other mental hospital in the country were more pains taken in the arrangement of pictures and of other objects of interest to make its wards well kept and attractive.

Medical Notes in Parliament

Pneumoconiosis Report

Mr. J. GRIFFITHS on Sept. 26 asked the Minister of Fuel and Power what action he proposed on the report of the committee on the problem of pneumoconiosis in the South Wales coalfield. Major LLOYD GEORGE replied: The committee's recommendations with regard to the establishment and equipment of a treatment and rehabilitation research centre require discussion with other Departments than my own. These discussions are already proceeding. Concurrently I am examining, and propose to put into effect as soon as the necessary arrangements can be made, other recommendations which can be implemented by strengthening existing machinery. These, I hope, will include the initial radiographic examination of all new entrants into the industry in South Wales; the periodical examinations of selected groups of miners in relation to concurrent assessments of the dust conditions of their employment; and, in association with the Ministry of Labour, an investigation into the present and progressive medical condition of miners who, because of the disease, have left the industry and have taken up other employment, the object being to provide guidance as to what other occupations are best for such cases. The machinery of my Department is to be strengthened for this work by appointing a second mines medical officer in South Wales, and by adding to the testing station a new section of staff to concentrate on the work of dust assessments. I am doing everything possible to deal with this problem within the limits imposed by wartime conditions. It is my intention to pursue the subject vigorously, and to spare no effort in tackling the problems created by this disease.

Penicillin for P.O.W.

Mr. KENDALL asked on Sept 28 whether the Minister of Health, in view of the fact that penicillin was available to German prisoners, would take immediate steps to make it available for British civilians in those cases where death would otherwise result. Mr. WILLINK replied that the Government was required by the Geneva Convention to care for wounded prisoners of war, without distinction of nationality, equally with our own personnel. The bulk of the penicillin at present available was required for Service cases, and the amount which could be released for the treatment of civilians was not sufficient to enable penicillin to be given to every case which might conceivably benefit from it. It was necessary to reserve this small amount for the treatment of cases in which it might be the only means of saving life or of effecting recovery from grave illness and in which the prospects of recovery were high.

Evacuation from London

On Sept. 26 Dr. HADEN GUEST asked the Prime Minister if he would state the Government's present policy in respect of the evacuation from London and Southern England of mothers with infant children, school-children, aged and disabled persons, and in-patients in hospitals. Mr. WILLINK, who replied, said that, as announced on September 7, the Government had decided to suspend further evacuation under the Government evacuation scheme from London and Southern England; it had also suspended the evacuation of hospital in-patients. On the other hand, he had already said on several occasions that the Government's advice to those already evacuated from London and Southern England was, "Do not come back."

Battle Casualties and Sickness in Allied Armies

Reviewing the war on Sept. 28 Mr. CHURCHILL said there were now between 2,000,000 and 3,000,000 men in France of the British and American Armies. The British had lost upwards of 90,000 men killed, wounded, and missing, and the United States, including Gen. Patch's Army, over 145,000. Along the eastern frontier of India the 14th British Imperial Army amounted to between 250,000 and 300,000 men. In the first six months of the present year this Army sustained 237,000 cases of sickness which had to be evacuated to the rear and tended in hospital. More than 90% of these cases returned within six months. In addition, there were over 40,000 battle casualties within the same six months. He trusted the inordinately heavy toll of disease would be markedly reduced in future operations. Many preventives of tropical disease had been discovered and safeguards against the onslaught of insects of all kinds. The D.D.T. powder, which had been fully tested and found to yield astonishing results, would henceforward be used on a great scale by the British Forces in Burma and by American and Australian Forces in the Pacific and indeed in all theatres, together with other remedies constantly improving. The Japanese also suffered from jungle diseases and malaria. Eradication of lice from Naples by strict hygienic measures could be held to have averted a typhus epidemic in the city and neighbourhood when the Allies occupied them.

Col. WICKHAM spoke of the fighting in New Guinea, where even open country was covered with grass infested with the dreaded typhus mite. Even in the hospital tents there the men were cheerful, though in some cases suffering from painful skin affections. A friendly informality existed between doctors, nurses, and patients, but medical discipline and precautions were enforced and observed. It was irksome in that climate to wear long trousers and gaiters, to button wristbands and to take regular doses of atebrin. But the results had been remarkable. Even in fighting conditions the incidence of malaria had been reduced from 100 per 1,000 per week to 2 per 1,000. Prophylactic measures were almost omitted from the Japanese medical programme, and the Japanese were less resistant to tropical diseases such as malaria and dysentery than were men of the white races.

Medical News

The recently formed Edinburgh Branch of the Polish Medical Association in the United Kingdom will hold its first meeting on Sunday, Oct. 8, at 3.15 p.m. at Scottish-Polish House, Greenhill Gardens, Edinburgh. It will be addressed by Dr. G. De Swiet.

The annual meeting and conference of the Tuberculosis Association is being held on Oct. 12 (afternoon, at the London School of Hygiene and Tropical Medicine), Oct. 13 (clinical meeting and discussion at Harefield Sanatorium), Oct. 14 (morning, at Manson House, Portland Place, W.). The annual general meeting will be held on Oct. 12 and Prof. Major Greenwood will deliver an address, "A Retrospect," on Oct. 14.

The Association of Austrian Doctors in Great Britain (14, Craven House, 121, Kingsway, W.C.2) makes the following announcements: A meeting on Friday, Oct. 13, at 6.45 p.m. to discuss jointly with the Austrian Pharmacists Group "Therapeutics in Austria and Great Britain"; Sunday, Oct. 29, 11.30 a.m., jointly with the Association of Austrian Chemists and Scientific Workers, a lecture on life-saving and life-preserving plants (vitamins, alkaloids, penicillin). The meetings will be held at the Austrian Centre, 69, Eton Avenue, N.W.3 (near Swiss Cottage Tube station).

A meeting of the Council of the Medical Superintendents' Society will be held at the Queen's (L.M.S.) Hotel, Birmingham, on Saturday, Oct. 14, at 2.30 p.m., and Sunday, Oct. 15, at 10 a.m.

The Association for Scientific Photography (Tavistock House North, Tavistock Square, W.C.1) announces the following meetings to be held this year: Saturday, Oct. 14, Caxton Hall, Westminster, 2.30 p.m., papers on cinemicrography. Saturday, Nov. 25, 16, Princes Gate, S.W., 3 p.m., electron micrography. Saturday, Dec. 30, Caxton Hall, 2.30 p.m., choice of materials for scientific photography.

An autumn series of lectures on medical and allied subjects will be given at the Royal Institute of Public Health and Hygiene, 28, Portland Place, W., on Wednesdays, Oct. 18 to Nov. 22, at 3.30 p.m. Seats are reserved for Fellows, Members and Associates of the Institute, but accommodation is provided for others who are interested in health problems. The Museum of Hygiene may be viewed before or after the lectures.

EPIDEMIOLOGICAL NOTES

Discussion of Table

In *England and Wales* during the week notifications of scarlet fever exceeded those of last week by 340 and those of diphtheria by 60; there were 271 fewer cases of dysentery, and 140 of whooping-cough.

Scarlet fever is prevalent in the north; Yorks West Riding recorded 105 more cases than last week, and Lancashire 35 more. Whooping-cough showed a lower incidence except in the north midlands, where notifications rose by 30. Although the total notifications of measles went up by only 17, there were local fluctuations: in the combined south-eastern and south-western areas the notifications fell by 93, but there was a rise of 58 in Lancashire.

For the fourth week the notifications of diphtheria have increased, and the total is now 38% higher than a month ago. Gloucestershire notified 25 more cases than last week, Durham 15, and Yorks West Riding 14.

Although there were 271 fewer cases of dysentery than last week the incidence remains at the very high level of 351. The largest returns were Glamorganshire 43 (Cardiff C.B. 41), Essex 30, London 24, Derbyshire 23, Staffordshire 21, Lancashire 21, Hertfordshire 20, Southampton 14, Durham 13, Surrey 12, Dorset 12, Suffolk 10, Kent 10.

In *Scotland* measles notifications went up by 44, scarlet fever by 29, and diphtheria by 25, while those for whooping-cough fell by 39. The notifications of dysentery were 7 lower than last week, three-quarters of the total cases being returned from the two cities of Edinburgh and Glasgow, which reported 30 and 50 cases respectively. There were 39 deaths from infantile diarrhoea in the large towns, still over twice as many as during the corresponding period last year: 32 of these deaths were registered in Glasgow.

In *Eire* the incidence of diphtheria rose by 21 cases. Thirty-seven registration areas were involved. 148 cases of diarrhoea and enteritis were recorded in Dublin C.B.

Diphtheria Immunization

A survey by the medical officers of the Ministry of Health, based on the returns made by local authorities published in the monthly bulletin of the Ministry of Health and the E.P.H.L.S., show that mass immunization has affected the prevalence of diphtheria and in particular the mortality. In 1943 the incidence at ages under 15 was 1.16 per 1,000 among the immunized and 4.06 among the non-immunized, while the mortality per 1,000 children was 0.0104 and 0.260 respectively. In other words, the incidence of diphtheria during 1943 among children under 15 was 3½ times greater in the non-immunized group than in the immunized group and the chance of dying from diphtheria was 25 times as great.

The deaths from diphtheria in England and Wales at all ages in successive half years 1938–44 were:

	1938	1939	1940	1941	1942	1943	1944
Jan.–June ..	1,622	1,142	995	1,476	989	801	503
July–Dec. ..	1,238	990	1,485	1,165	838	559	—
Year ..	2,860	2,132	2,480	2,641	1,827	1,370	—

The greatest fall in the number of deaths occurred, as would be expected, in the age groups in which immunization was concentrated. The death rates per 100,000 of the estimated population were:

	Ages							
	0–	1–	2–	3–	4–	5–	10–	15+
Average rate 1931–41	10	24	40	53	59	41	10	0·6
1942	7	17	24	38	41	26	6	0·6
1943	8	11	19	26	29	17	5	0·7

Week Ending September 23

The notifications of infectious disease in England and Wales during the week included: scarlet fever 1,696, whooping-cough 1,059, diphtheria 566, measles 1,509, acute pneumonia 435, cerebrospinal fever 33, dysentery 365, paratyphoid 8, typhoid 12, poliomyelitis 16, polio-encephalitis 1.

No. 37

INFECTIOUS DISEASES AND VITAL STATISTICS

We print below a summary of Infectious Diseases and Vital Statistics in the British Isles during the week ended Sept. 16.

Figures of Principal Notifiable Diseases for the week and those for the corresponding week last year, for: (a) England and Wales (London included). (b) London (administrative county). (c) Scotland. (d) Eire. (e) Northern Ireland.

Figures of Births and Deaths, and of Deaths recorded under each infectious disease, are for: (a) The 126 great towns in England and Wales (including London). (b) London (administrative county). (c) The 16 principal towns in Scotland. (d) The 13 principal towns in Eire. (e) The 10 principal towns in Northern Ireland.

A dash — denotes no cases; a blank space denotes disease not notifiable or no return available.

Disease	1944					1943 (Corresponding Week)				
	(a)	(b)	(c)	(d)	(e)	(a)	(b)	(c)	(d)	(e)
Cerebrospinal fever ..	37	2	15	4	1	44	2	19	4	—
Deaths		—	—				—	—		
Diphtheria	541	13	183	100	15	723	33	176	64	21
Deaths	12	—	3	3	—	9	—	3	2	—
Dysentery	351	24	104	—	—	268	33	88	—	—
Deaths				—	—				—	—
Encephalitis lethargica, acute	—	—	—	—	—	2	—	—	—	—
Deaths		—					2			
Erysipelas			53	10	2		—	55	9	—
Deaths		—					1			
Infective enteritis or diarrhoea under 2 years				185					93	
Deaths	91	7	39	31	9	69	13	18	30	11
Measles*	1,155	29	128	18	24	491	45	36	10	2
Deaths	1	—	—	—	—	—	39	—	—	—
Ophthalmia neonatorum	71	3	21	—	1	81	5	19	—	—
Deaths										
Paratyphoid fever ..	8	—	—	1(A)	—	8	—	1	—	—
Deaths	—	—	—	—	—	1	—	—	—	—
Pneumonia, influenzal†	291	7	2	1	—	365	15	5	—	—
Deaths (from influenza)	11	—	—	—	—	9	—	2	1	—
Pneumonia, primary ..			168	12				167	14	
Deaths		14		8	5		21		2	10
Polio-encephalitis, acute	2	1				2	—			
Deaths		—					—			
Poliomyelitis, acute ..	14	—	4	2	—	16	—	—	1	1
Deaths		—					—			
Puerperal fever		1	16		—		—	19		—
Deaths										
Puerperal pyrexia‡ ..	130	3	9	5	2	198	10	17	1	1
Deaths		—					—			
Relapsing fever ..	—	—			—	—	—			—
Deaths										
Scarlet fever	1,591	28	253	31	59	2,639	231	339	36	65
Deaths	—	—	—	—	—	—	—	—	—	—
Smallpox	—	—	—	—	—	—	—	—	—	—
Deaths				—	—				—	—
Typhoid fever ..	5	—	6	14	3	7	—	3	5	1
Deaths	—	—	1	—	—	—	—	—	—	—
Typhus fever	—	—	—	—	—	—	—	—	—	—
Deaths				—	—				—	—
Whooping-cough* ..	1,083	55	91	61	7	1,531	117	221	68	17
Deaths	10	4	2	—	—	12	1	1	1	—
Deaths (0–1 year) ..	355	30	94	46	28	314	48	70	52	27
Infant mortality rate (per 1,000 live births)										
Deaths (excluding still-births)	3,931	435	650	181	131	3,655	590	536	198	113
Annual death rate (per 1,000 persons living)			14·9	11·7	§			12·1	13·0	§
Live births	6,271	413	822	373	304	5,902	758	858	417	257
Annual rate per 1,000 persons living ..			16·7	24·2	§			17·5	27·4	§
Stillbirths	191	15	40			197	28	41		
Rate per 1,000 total births (including stillborn)			46					46		

* Measles and whooping-cough are not notifiable in Scotland, and the returns are therefore an approximation only.

† Includes primary form for England and Wales, London (administrative county), and Northern Ireland.

‡ Includes puerperal fever for England and Wales and Eire.

§ Owing to evacuation schemes and other movements of population, birth and death rates for Northern Ireland are no longer available.

The Services

CASUALTIES IN THE MEDICAL SERVICES

Killed in action in Italy.—Capt. David Halpern, R.A.M.C.

Missing, presumed killed on active service.—Surg. Lieut. Richard Leslie Hall, R.N.V.R.

DEATHS IN THE SERVICES

Lieut.-Col. John Telfer Calvert, C.I.E., died, aged 80, on Sept. 20 at Eastbourne, where he had lived since retiring, after a distinguished career in the Indian Medical Service. He was educated at St. Thomas's Hospital, graduated M.B.Lond. in 1887, and took the Cambridge D.P.H. in 1889. During leave home he passed the M.R.C.P. in 1906, and was elected a Fellow of the Royal College of Physicians of London in 1917. He gained a high place at the entrance examination to the I.M.S. in 1889, and saw active service at Manipur on the N.E. Frontier in 1891, and on the N.W. Frontier in the Tirah Campaign in 1897, with medals and clasps. Soon after, he joined the Bengal Civil Medical Department and held civil surgeonships, including that of Cuttack, with much surgical experience and charge of a medical school. Later he was appointed physician and professor of materia medica at the Calcutta Medical College and edited the 4th edition of Ghosh's *Materia Medica*. He was subsequently promoted to be Principal of the Medical College and professor of medicine, a very onerous post in which he proved to be a good administrator and teacher. He was a Fellow of the Calcutta University, and became Dean of the Medical Faculty and President of the Board of Health, Calcutta. Col. Calvert was awarded the C.I.E. in 1919 shortly before his retirement. He was a popular officer and had a great fund of good stories, and contributed papers to the *Indian Medical Gazette*. He joined the British Medical Association in 1891 and became vice-president of the Section of Medicine at the Annual Meeting of 1931. He leaves a wife, three sons, one of whom is in the Naval Medical Service and another in the British Army, and a daughter to mourn his loss.

Universities and Colleges

UNIVERSITY OF LONDON

Prof. Frank Goldby, M.D.Camb., has accepted the appointment to the University Chair of Anatomy tenable at St. Mary's Hospital Medical School and hopes to take up his post during the session 1945. Since 1937 he has been Elder Professor of Anatomy in the University of Adelaide.

The following appointments, both tenable at the College of the Pharmaceutical Society, have been made: H. Berry, B.Sc., Ph.C., F.R.I.C., to be Professor of Pharmaceutics; W. H. Linnell, D.Sc., M.Sc., Ph.D., Ph.C., to be Professor of Pharmaceutical Chemistry

UNIVERSITY OF LIVERPOOL

The following candidates have been successful in the Final Examination for the degrees of M.B., Ch.B.:

Part I: Cécile N. Broster, G. B. Brown, J. H. E. Carmichael, P. Hampson, Vivien P. Helme, Maureen M. Hoey, D. T. L. Hughes, J. C. Humber, G. C. Hunter, Olive R. Rodgers, L. Rosenbloom, K. S. Shaw, D. R. Wallace-Jones.

Part II: M. M. I. el Haddad, P. R. B. Jones, R. D. B. Williams.

UNIVERSITY OF SHEFFIELD

The following have passed the recent Final Examinations in the Faculty of Medicine:

M.D.—F. Ellis (with distinction); P. M. Inman.

M.B., Ch.B.—*Parts II and III:* *Marjorie Hallatt, *M. H. Oliver, *L. L. Ralph, *W. J. W. Sharrard; Isabella M. Almond, B. R. Eaton, D. P. Greaves, G. K. E. Inman, J. W. Laws, J. D. Simpson, D. R. Thompson.

* Second-class honours.

UNIVERSITY OF DURHAM

The Court of the University of Durham resolved, on July 31, that Mr. John Hamilton Barclay, M.D., M.S.Dunelm, F.R.C.S., be appointed to the part-time Chair of Surgery as from Aug. 1, 1944.

ROYAL COLLEGE OF SURGEONS OF ENGLAND

The following demonstrations will be given at the College in Lincoln's Inn Fields at 4 p.m. on each day: Monday, Oct. 16, Prof. A. J. E. Cave, Anatomy of the Pituitary Gland; Tuesday, Oct. 17, Mr. L. E. C. Norbury, Simple Tumours of the Rectum and Colon; Wednesday, Oct. 18, Prof. Cave, Anatomy of the Adrenal Gland; Thursday, Oct. 19, Mr. R. Davies-Colley, Diseases of the Stomach and Intestines; Friday, Oct. 20, Prof. Cave, Anatomy of the Thyroid Gland. The demonstrations are open to advanced students and medical practitioners.

Letters, Notes, and Answers

All communications with regard to editorial business should be addressed to The Editor, British Medical Journal, B.M.A. House, Tavistock Square, London, W.C.1. Telephone: Euston 2111. Telegrams: *Aitiology, Westcent, London.* ORIGINAL ARTICLES AND LETTERS forwarded for publication are understood to be offered to the *British Medical Journal* alone unless the contrary be stated.

Authors desiring REPRINTS should communicate with the Publishing Manager, B.M.A. House, Tavistock Square, W.C.1, on receipt of proofs. Authors over-seas should indicate on MSS. if reprints are required, as proofs are not sent abroad.

ADVERTISEMENTS should be addressed to the Advertisement Manager, B.M.A. House, Tavistock Square, London, W.C.1 (hours 9 a.m. to 5 p.m.). Telephone: Euston 2111. Telegrams: *Articulate Westcent, London.*

MEMBERS' SUBSCRIPTIONS should be sent to the SECRETARY of the Association. Telephone: Euston 2111. Telegrams: *Medisecra Westcent, London.*

B.M.A. Scottish Office: 7, Drumsheugh Gardens, Edinburgh.

ANY QUESTIONS?

Whooping-cough Prophylaxis

Q.—*What is the duration of the immunity that may reasonably be expected from prophylactic inoculation against whooping-cough?*

A.—Probably nobody has sufficient data to say much with confidence about the duration of protection from inoculation against whooping-cough. The present position, briefly, seems to run thus. Bell (*Publ. Hlth., Rep. Wash.*, Aug., 1941) and Kendrick (*Amer. J. Hyg.*, 1943, **38**, 193) published highly encouraging results of work in the U.S.A. running from 1938 to 1943; vaccination is not yet in general use in America. These authors used alum-precipitated vaccine; this is not yet generally available here. Further experience and evidence is obviously much needed. (See also answer to question on "Mixing Pertussis Vaccine and Diphtheria Prophylaxis" in the *Journal* of Feb. 12, 1944, p. 243).

Snoring in the Shelter

Q.—*Can you suggest any cure or alleviation of a patient, male, aged 55, who, by his snoring habits, disturbs all the other shelterers? His upper respiratory organs are quite clear, and there is no nasal obstruction. Sleeping on his back or side makes no difference.*

A.—With the conditions as set out in the question the next step in treatment is to ensure nasal breathing by using a mouth shield. This is fitted by a dental surgeon, rests between the lips and teeth, and is more efficient and better tolerated than other mechanical means of preventing mouth breathing.

Otitis Media and Otitis Externa

Q.—*Can an external otitis cause an otitis media? A patient had an external otitis which flared up suddenly. The drum was previously intact—no old scars or atrophic patches. Following this acute flare-up there was a small central perforation—discharging pus. The pain during the flare-up, which lasted little more than one day, was that of an external otitis—no mastoid tenderness. The patient had no coryza and no otitis media. The following day the canal tended to widen and was discharging. The drum was not seen, and the perforation found about a week after the flare-up.*

A.—Except in cases in which the infection passes through a pre-existing dry perforation, otitis media secondary to otitis externa is of the utmost rarity. When it does occur, it is generally associated with fungus infections.

Vulval Warts

Q.—*A married woman, pregnant, had a vaginal discharge, frequent and painful micturition, warts on the vulva. Wassermann reaction was negative and smears of pus did not have gonococci. These findings were confirmed by a specialist on venereal disease. However, she was given a course of treatment with "sulpha" drugs. The question is, What percentage of cases of purulent vaginal discharge with vulval warts are venereal? Was the infection in this case gonococcal in spite of the absence of gonococci? What is the best treatment for these warts in cases of gonorrhoea and, secondly, in cases where gonorrhoea cannot be established?*

A.—It is quite impossible to say with anything approaching accuracy what percentage of cases of purulent vaginal discharge with vulval warts is venereal; much depends on what is meant by the term "venereal"; at a guess, perhaps 60% is due to the gonococcus. It is equally impossible to say whether the case in question was gonococcal; if it reacted well to chemotherapy, the betting is that it was because gonococci are more susceptible to "sulpha" drugs than most organisms. The converse does not necessarily hold because there are many resistant strains of gonococci. The fact that gonococci were not found does not rule out gonorrhoea; these organisms are often very difficult to find

especially in females, and repeated smears and cultures are necessary before their presence can be excluded. The treatment of vulval warts is the same whether they accompany gonorrhoea or not, except that the treatment of the discharge, which is essential, varies with the cause. The most effective local treatment is removal with the electrocautery. See also the answer published on Nov. 13, 1943 (p. 631).

Pyretotherapy for Gonorrhoea

Q.—Please describe the T.A.B. shock treatment for gonorrhoea. To what extent is this effective for non-venereal infections of the urethral tract and chronic non-venereal prostatitis?

A.—It is assumed that the patient is sulphonamide-resistant and that two courses of sulphathiazole or sulphadiazine have failed to establish cure. In the first place it is essential to examine the patient and to exclude serious heart or other visceral disease which would contraindicate T.A.B. therapy. The technique is described in the *Journal* of Aug. 28, 1943 (p. 288). A different "sulpha" preparation from the original one—e.g., sulphadiazine if sulphathiazole was used first), may be given immediately before, during, or immediately after the pyrexial therapy in doses of about 4 g. daily for five or six days. Pyrexial therapy is often effective in non-gonococcal infections of the urinary tract and in chronic non-gonococcal prostatitis, but should be combined with other measures, especially in the latter—e.g., irrigations and prostatic massage. It should be remembered that this form of therapy involves some, if a very slight, risk to life; it should not, therefore, be undertaken lightly or in the absence of full medical and nursing facilities.

Joss-sticks and Mosquitoes

Q.—In the East before the war it was possible to procure a "mosquito coil" made in Japan, which burnt very slowly, giving off a faint smoke and a pleasant incense-like aroma. The burning of a coil for even a few hours in the evening would drive away every mosquito, or at least make them so drowsy that they could easily be caught in the hands and destroyed. Is it possible to procure such things in this country now? Alternatively, what is the composition and how are they made? When so many people sleep in shelters—the abode of these night-hunters—it would be a boon to be rid of these pests.

A.—Several kinds of pastilles for domestic use as fumigants against mosquitoes are not uncommonly seen in use in India and probably other places in the East. One is in the form of taper-like sticks (Chinese joss-sticks they are often called), another is moulded into a coil, or they may be small cones like miniature volcanoes, which can be lighted at the top to burn slowly, giving off an incense-like smoke. Probably all are dependent for their effectiveness on pyrethrum, the powdered flowers of one or two species of chrysanthemum (*C. cinerariaefolium* or other species containing the active principle), now very difficult to obtain owing to shortage of this material, which formerly came chiefly from Japan and Dalmatia. How far such pastilles are obtainable in this country, or even now elsewhere, is unknown to the writer, but they could easily be home made if the necessary pyrethrum—e.g., Keating's—could be obtained.

Howard and Bishop (*Mosquito Remedies and Preventives*. U.S. Farmer's Bull. No. 1570) give the following: "The powder (pyrethrum) is heaped up into a little pyramid which is lighted at the top and burns slowly, giving out a dense and pungent smoke. Often the powder is moistened and moulded roughly into small cones, and after drying it burns readily and perhaps with less waste than does the dry powder." Another substance used in the same way is *Datura stramonium* made up with nitre in the proportion of 1 to 3 of datura. Probably some nitre would improve the first-mentioned recipe. It is important that the pyrethrum powder should not be too old. Pastilles of this kind are also made from the dry powdered pellitory root (Pyrethri radix, the dried root of *Anacyclus pyrethrum*). Such joss-sticks, cones, etc., are often effective to a certain extent in clearing living-rooms of mosquitoes or keeping them at bay, but they are more a domestic palliative than a serious means of dealing with mosquitoes for public health purposes or in the Army, where spraying with some insecticide of the "flit" type or special insecticide is the usual method employed. Nevertheless, the joss-stick enjoys considerable popularity as a domestic adjuvant, and it might possibly be developed and used more. The difficulty at present is to obtain pyrethrum or an effective substitute. In Russia anabasine (obtained from the plant *Anabas aphylla* and its hybrids), usually in the form of the sulphate, has been found very effective as a fumigant against mosquitoes. But again it is doubtful if this substance could be obtained in this country.

Dipsomania

Q.—Can increased cerebrospinal fluid pressure be reduced by any simpler procedure than lumbar puncture? An American neurologist maintains that this increased pressure, resulting from an allergic reaction to alcohol, is the pathological basis of dipsomania.

A.—It would be well to comment upon the second part of this question first. The statement that dipsomania is caused by high intracranial pressure resulting from allergic reaction to alcohol is not only novel, but is really, so far as one knows, founded upon no definite evidence. I do not think that this statement should guide one in the treatment of dipsomania. If, however, cerebrospinal fluid pressure is to be reduced for other reasons this may be achieved by medical methods. The simplest of these is to give magnesium sulphate enemas. Use of sodium chloride or sucrose in hypertonic solution intravenously is more rapidly effective. These methods of reducing pressure have the disadvantage that they lead ultimately to reactionary increase in pressure so that the patient's latter state is liable to be worse than the first. It is consequently the practice to reserve medical methods of reducing high intracranial pressure for the immediate pre-operative period where there is structural cause for the high pressure. Because of the reasons already given, these methods are not likely to benefit dipsomania.

Heredity and Involutional Depression

Q.—How far does heredity play a part in the production of involutional depression? A patient whose father has been in a mental home for two years with this condition wishes to know whether he should limit his family in view of the possible transmission of the disease. His father was a normal clever man until the age of 55, when he broke down with profound melancholia. What would you advise?

A.—Heredity is certainly an important factor in involutional depression. A more exact diagnosis is, however, desirable. If the psychosis is of the recurrent type, with evidence of previous depressive phases, even if not of such a degree as to lead to hospital treatment, the hereditary influence is strong, and approximately one-fifth of the children of persons suffering from these psychoses may be expected to develop similar trouble. If, however, it is not of this type, the eugenic prognosis is better, and the latest work gives 3% as the expectation of psychosis in the children of the original patient. The actual advice to be given to the son who is now asking advice will depend on his age and mental constitution. If he is very young, one will not be able to assess his constitution very satisfactorily; if he is, say, 35, one will be able to have a fair notion as to whether he is himself unstable. If he is an ordinary sort of man, then we can assess his own predisposition to psychosis as, say, 3%—i.e., not so much greater than the expectation of the average man. The expectation of psychosis for his hypothetical children will be negligibly greater than the average. If, however, he is an odd, psychopathic, neurotic, or otherwise unstable person, and still more if his wife is also unstable, then the outlook for the children would not be so good, and some restriction of the size of the family would be desirable. The Eugenics Society, 69, Eccleston Square, London, S.W.1, has a panel of experts who are prepared to give free advice on problems of this type when the relevant facts are presented, confidentially of course.

Milroy's Disease

Q.—A patient aged 34 has suffered from Milroy's disease since she was 17—hereditary oedema of the legs. An aunt of hers also has "swollen legs." What is the aetiology, prognosis, and treatment of this disease? Is it an allergic condition? My patient has fairly frequent attacks of indigestion for which there is no apparent organic cause. Is it possible that these attacks are due to congestion of the gastric lymphatics? Her general health is otherwise good except for slight dyspnoea on exertion—e.g., cycling. No signs of cardiac disease. Urine normal. Elastic stockings and rest give only temporary relief.

A.—The aetiology of Milroy's disease is unknown. Some have suggested that it may be due to an abnormality in the structure of the lymphatics; others favour the view that it is a vasomotor disturbance. Allergy does not appear to play a part in the condition. Only the legs are affected, and this patient's indigestion is probably unrelated to the Milroy's disease. The swelling, once established, persists, and tends to increase, but the duration of life is not affected. No treatment is likely to be of permanent benefit, but massage and bandaging may be recommended. Care should be taken to avoid trauma and infection. The acute erysipelatous attacks which sometimes occur in swollen legs of this type are often associated with fungus infections between the toes and the formation of cracks and fissures which allow the entrance of streptococci.

Postponement of Menstrual Period

Q.—A patient of mine is anxious to know if there is any way in which her menstrual period might be postponed for a few days, as her husband is due for 7 days' leave just when her period is expected. Would progesterone or testosterone be of any use in delaying the onset, and, if so, what is the dosage and method of administration? Is pregnancy likely to result from intercourse during the time?

A.—Ovulation might be inhibited by testosterone or progesterone if given in sufficiently large quantities several days before ovulation is expected—that is, beginning a few days after the end of the menstrual period. Oestradiol or hexoestrol has a similar action,

and is preferable. Probably 5 mg. of hexoestrol by mouth, three times daily, would be a dose sufficiently large to inhibit the pituitary–ovulatory mechanism, and the next menstruation would follow some 7 to 10 days after cessation of this therapy. This method of contraception might be justifiable in special circumstances, but is not advisable as a routine; nor could its efficacy be guaranteed. If, however, it does succeed in preventing ovulation, then pregnancy would not result from intercourse during the time the hexoestrol was being given.

Bactericidal Action of Lactic Acid

Q.—*When cow's milk is prepared with lactic acid B.P. (45 to 60 drops to the pint) for infant feeding, has the lactic acid any bactericidal action?*

A.—The reaction of fresh cow's milk is slightly on the acid side of neutrality—about *p*H 6.6. If 60 drops of lactic acid *B.P.* are added to a pint of milk (taking 1 drop as containing 1/20 c.cm.), the *p*H will be lowered to about 5.4. Though this degree of acidity might have a bacteriostatic effect on some pathogenic species of bacteria—i.e., inhibit their growth—it would probably have no more than a minimal bactericidal action at room temperature, unless the exposure was prolonged for some hours. Many pathogenic organisms produce this, or an even greater, degree of acidity when growing in the presence of a fermentable sugar. If the milk was left at a temperature favourable for bacterial multiplication, the presence of the acid would encourage the growth of lactic streptococci and of lactobacilli at the expense of other organisms.

X-ray Diagnosis of Appendicitis

Q.—*If an appendix is not shown up by barium meal and x-ray examination, does it mean that the organ is pathological? The patient, aged 49, has for some years had attacks (lasting from 3 to 6 weeks) of slight pain in the lower abdomen with marked discomfort in the epigastrium 3 to 4 hours after food. The discomfort is eased by food and alkalis. All investigations proved negative except for some gastroptosis and enteroptosis and non-filling of the appendix. The abdominal symptoms have sometimes wakened the patient during the night, which looks as if the visceroptosis is not the cause of the trouble. For some time she has had also general rheumatic pains, and now signs of rheumatism of the arthritic type are appearing—the fingers swelling after gardening, etc. The patient is very active both mentally and physically, and apart from the above enjoys excellent health.*

A.—An appendix which is blocked at its base obviously cannot be visualized on the *x*-ray film, but it would nevertheless be very unwise to accept non-visualization as evidence that the appendix is pathological unless the clinical signs and symptoms are highly suggestive. It must be recognized that a transient muscle spasm may prevent the appendix filling with barium; furthermore, a retrocaecal appendix may fill and empty at the same time as the caecum, and so be completely invisible since obscured by the caecal shadow. Even oblique views may not overcome the difficulty. On the whole, it is the writer's opinion that the *x*-ray diagnosis of appendicular trouble is not to be trusted, and, further, that large numbers of unnecessary operations are being performed on the basis of an *x*-ray diagnosis. The ultimate decision should be made on clinical grounds. An *x*-ray (often nowadays demanded by an "enlightened public") is as likely to mislead as to be of any help. It is advised, therefore, in the case under consideration, that the *x*-ray findings be ignored and the diagnosis made from clinical findings. While some of the symptoms would fit in with an appendicular colic, the relief afforded by food and alkalis is not common in appendicular cases, nor is the particular periodicity of the attacks. Insufficient data are given to make a tentative diagnosis, but further investigation—e.g., cholecystogram—should be carried out before it is assumed that the visceroptosis explains the symptoms.

Constitutional Obesity

Q.—*A patient aged 40 is suffering from obesity. He weighs 16 stone, has large breasts, female in type and extremely hirsute, and has testicles slightly smaller than the average; penis also slightly smaller. Sexual interest is normal; he is married, has two children who are quite healthy, is of more than average intelligence, and is not by any means sluggish in his movements. He has never been ill, except for minor ailments. He does not overeat but drinks, perhaps, abnormal quantities of water. What treatment would bring his weight to normal?*

A.—No indication is given as to the duration of the obesity. If it were of recent origin, and if potency had diminished or disappeared and genital size decreased, one would have to consider the possibility of an adrenal tumour, or possibly Cushing's syndrome if other features were present.

Taking the case as described, it is more probably a constitutional adiposity, with a hypothalamic-pituitary basis. If so, there is no specific treatment, but a low calorie diet and thyroid might be helpful. Further. if there is an element of water retention, mercurial diuretics—e.g., injectio mersalyli *B.P.*, 1 to 2 c.cm. injected intramuscularly, twice weekly, for one month, and repeated after an interval of two weeks, are of benefit. The mercurial diuretic should be preceded the day before by 1 g. of ammonium chloride, in capsule, t.d.s.

Streptococcal Throat Carriers

Q.—*A girl aged 13 on returning from boarding school brought a report that all the girls had throat swabs taken at the end of term, and that hers and many others showed a growth of haemolytic streptococci. She was required, before returning to school, to obtain two consecutive negative swabs, with an interval of at least five days between. I should like to know—(1) Does the presence of the organisms in the throat warrant this ruling on the part of the school authorities? (2) What treatment is likely to produce the negative swabs required?*

A.—Wholesale swabbing of throats in a boarding school is usually undertaken after an outbreak of diphtheria or scarlet fever or sore throat. In this instance it may have been either of the latter two infections, and apparently a goodly proportion of the symptomless contacts were found to be streptococcal throat carriers. The school authorities have probably no legal power to insist on two consecutive negative throat swabs before the pupil returns to school, but in asking for this evidence of freedom from infection they were doubtless anxious to avoid a recrudescence of the original outbreak. The chances of such an occurrence are slight, for the pupils would already have some specific immunity as a result of the epidemic spread of the infecting streptococcus, and the proportion of streptococcal carriers after a summer vacation of, say, eight weeks would likely be small. The practitioner could therefore ignore the request for negative swabs in his school-girl. If he does have throat swabs bacteriologically examined and if haemolytic streptococci are still present in considerable numbers, the girl must be regarded as a persistent carrier; in which case, nose and throat must be carefully examined, preferably by a specialist, for any pathological abnormality such as septic tonsils or sinusitis. Treatment will depend on the findings.

LETTERS, NOTES, ETC.

Midwifery and Housing

Dr. Ninian Falkiner writes from the Master's House, Rotunda Hospital, Dublin: As domiciliary midwifery still occupies a most important position in the British Isles, it seems obvious that the homes in which confinements will take place should be planned accordingly. I would, therefore, respectfully suggest that any plans for housing on a large scale should not overlook this aspect of public health.

Wooden Bullets

Dr. L. H. Taylor (Maidstone) writes: I was talking over Major Pollard's recent letter (Sept. 23, p. 424) with a combatant officer, and he assured me that in an exercise last summer an officer was hit in the abdomen with one of these "bulleted blanks" and died in hospital as a result of perforation of his intestine. The range was 5 to 10 yards. So perhaps a grain of salt should be taken with Major Pollard's remarks!

Wasp and Bee Stings

Dr. J. Barr Stevens writes: Regarding the question and answer in the *Journal* of Aug. 26 (p. 295), in 1889 there were some notes in the (June 1, p. 1226, and June 8, p. 1323) *Journal* on the treatment of snake bite with permanganate of potash. That summer I received a very painful sting, presumably from a bee, as the sting was left in my skin. I removed the sting and, inspired by the *B.M.J.* articles, rubbed into the small but obvious aperture a crystal of permanganate, with immediate and complete relief. I have frequently relieved people who have just been stung in the same way. About 1922 Dr. H. Muir Evans of Lowestoft read a paper on the treatment of stings by weavers (a stinging fish) by the injection with a hypodermic syringe of a strong solution of permanganate of potash into the spot stung. Since hearing his paper I have always used the syringe.

Sodium Morrhuate for Injection

Allen and Hanburys Ltd., write: The answer under the heading "Varicose Veins" on Sept. 9 (p. 360), mentions that sodium morrhuate has a variable composition. We should like to point out that injection solution of sodium morrhuate A. and H. is prepared from a selected fraction of the fatty acids of cod-liver oil—namely, those fatty acids which are so highly unsaturated that they have an iodine value not less than 300. This preparation is therefore practically free from sodium oleate. As R. T. M. Haines (*Lancet*, April 8, 1933, p. 748) has pointed out, there is reason to believe that sodium oleate is more toxic and also a less active sclerosing agent than are the sodium salts of the more highly unsaturated fatty acids. "Moramin," our preparation of ethanolamine morrhuate, also is prepared from the fatty acids of iodine value not less than 300.